常见故障判断与维修手册 V1.0

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FAQs and Service Manual V1.0

RiCOMA

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介绍

感谢你选购我公司的ＰＴＣＳ－０５系列绣花机，为让客户更充分地了解、使用、调节我公司绣花机，请仔细阅读本说明书，使最终用户掌据并了解更多的绣花机相关的基础知识，特编写此说明书。

Introduction

Thanks for purchasing PTCS- 05 series embroidery machine from our company. In order to allow customer to have a better understanding, operation and adjustment of the embroidery machine, as well as grasp and understand more basic knowledge about it, this Manual is prepared. Please read the manual carefully.

安全操作方法

- 正确的运用本说明书可以使机器延长寿命。
- 调节前必须先关闭电源。
- 机器未发生故障禁止拆卸机器。
- 请严格按照本说明进行调节机器，如未能理解请咨询当地代理商后再行调节。
- 如自己无法解决问题，请向当地经销商咨询。

Safety practices

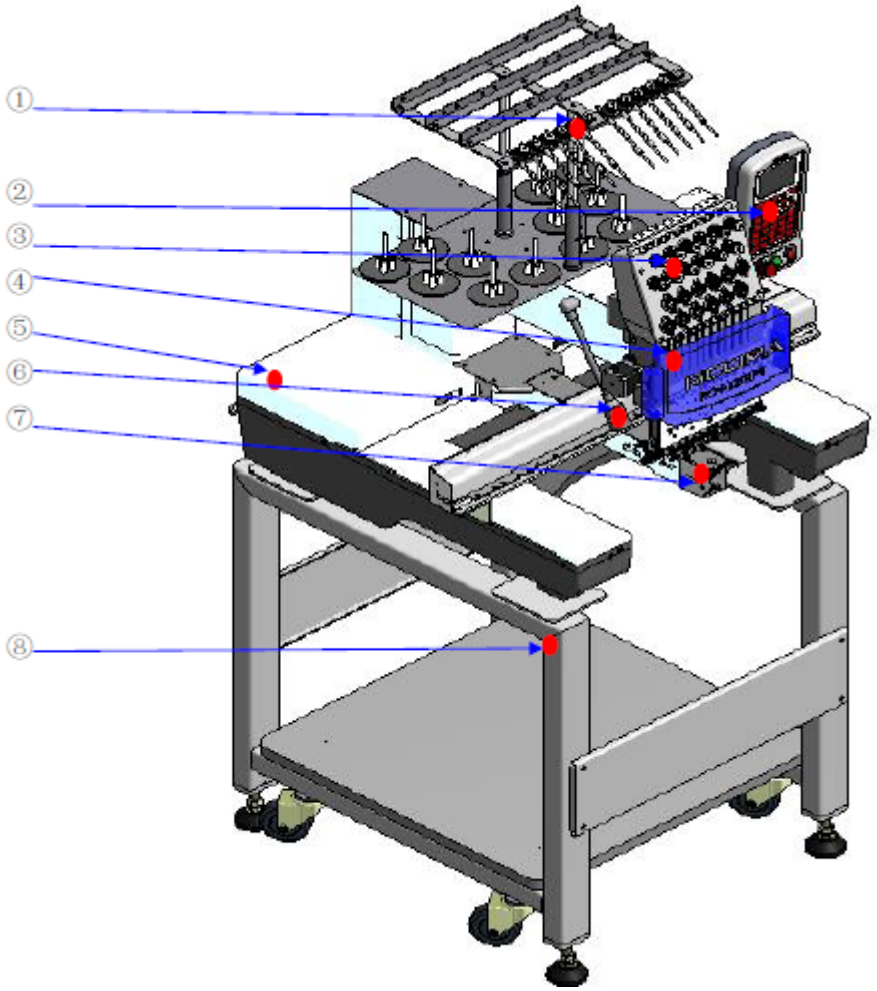
Proper use of the manual may help you prolong the machine service life.
Power off prior to any regulation.
No dismantlement is allowed unless machine fault is found.
Machine adjustment shall be conducted in strict compliance with the manual, and if any doubt, please contact local agent for adjustment.
In case of any unsolvable problems, please consult local dealer,

机器各部件名称及功能

1. 机器各部位名称及作用（左斜视图）

Name and function of machine parts

1. Name and function of each machine part (left oblique drawing)



①——线架（引导、排列线的顺序）　②——操作头（操作并控制机器工作）

③——过线器（调节面线的张力）　④——针杆架（左右移实现颜色切换）

⑤——机座（安装各机构零配件）　⑥——LED 照明灯（工作时为机器提供照明）

⑦——梭箱　（安装旋梭）　⑧——GF 机架（机器安装台）

1. Thread stand (guide and arrange the thread)　2. Operation head (operate and control machine)

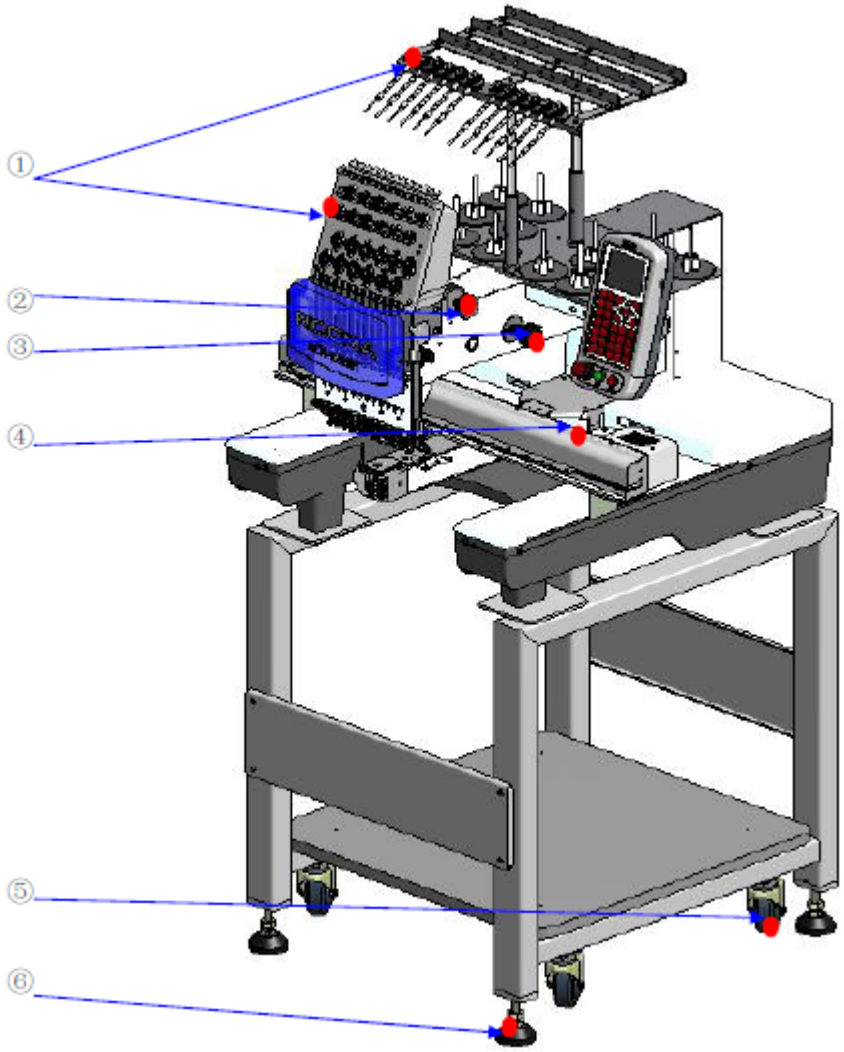
3. Thread tension base (regulate the tension of upper threads) 4. Needle bar frame (conduct color replacement by left/right movement)

5. Base (mount parts of each mechanism)　6. LED light (provide machine lighting)

7. Shuttle box (install rotating hook)　8. GF stand (machine mounting table)

2.机器各部位名称及作用（右斜视图）

2. Name and function of each machine part (right oblique drawing)



①——面线调节旋钮 （调节面线张力） ②——换色电机（切换颜色）

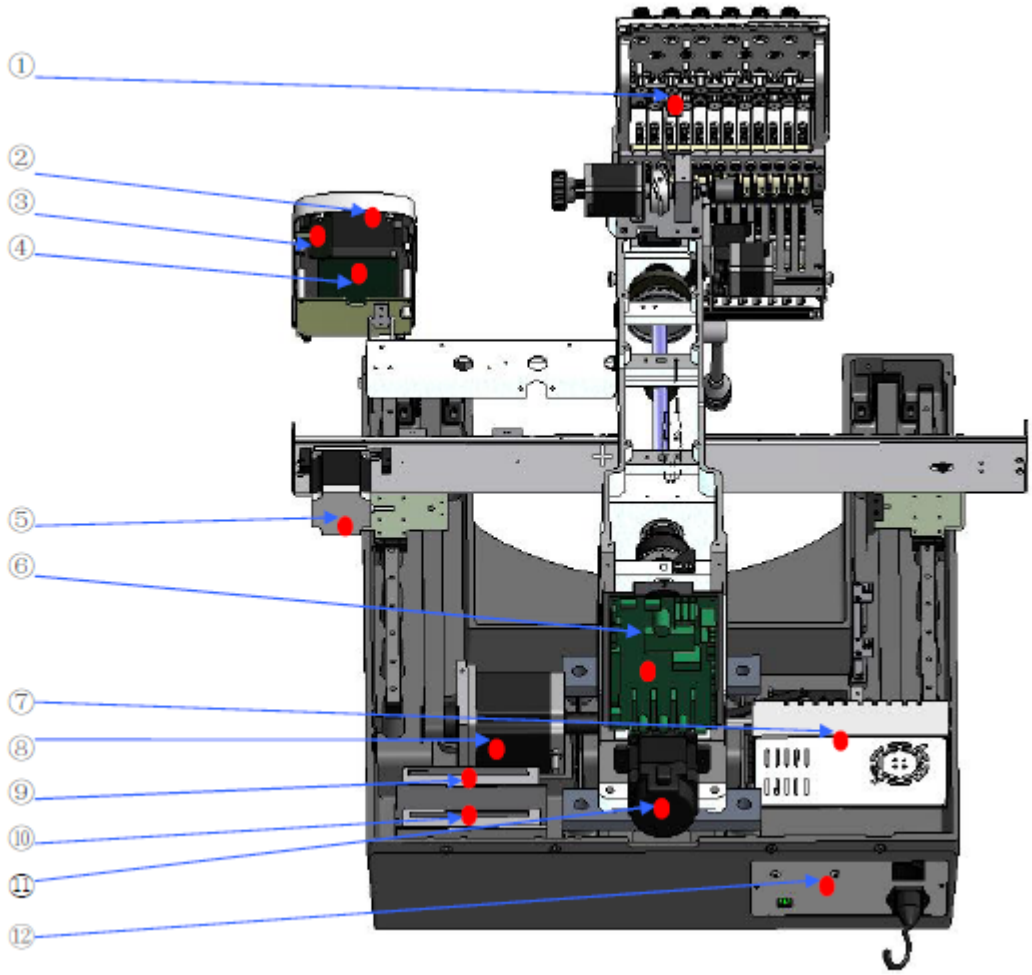
③——主轴调节手柄 （停机时转动机器） ④——X 向驱动部位（前后左右移动绣框）

⑤——万向脚轮 （方便移动机器） ⑥——调整支脚（调节机的高度）

1. Upper thread adjustment knob (adjust the tension of upper thread)
2. Color changing motor (switch color)
3. Spindle regulating handle (rotate machine during downtime)
4. X-direction drive part (move tabouret frame in four-direction)
5. Universal caster (convenient for machine movement)
6. Adjustable supporting foot (adjust machine height)

3 电气部位各部件名称及作用（一）;

3. Name and function of each electrical part (I);



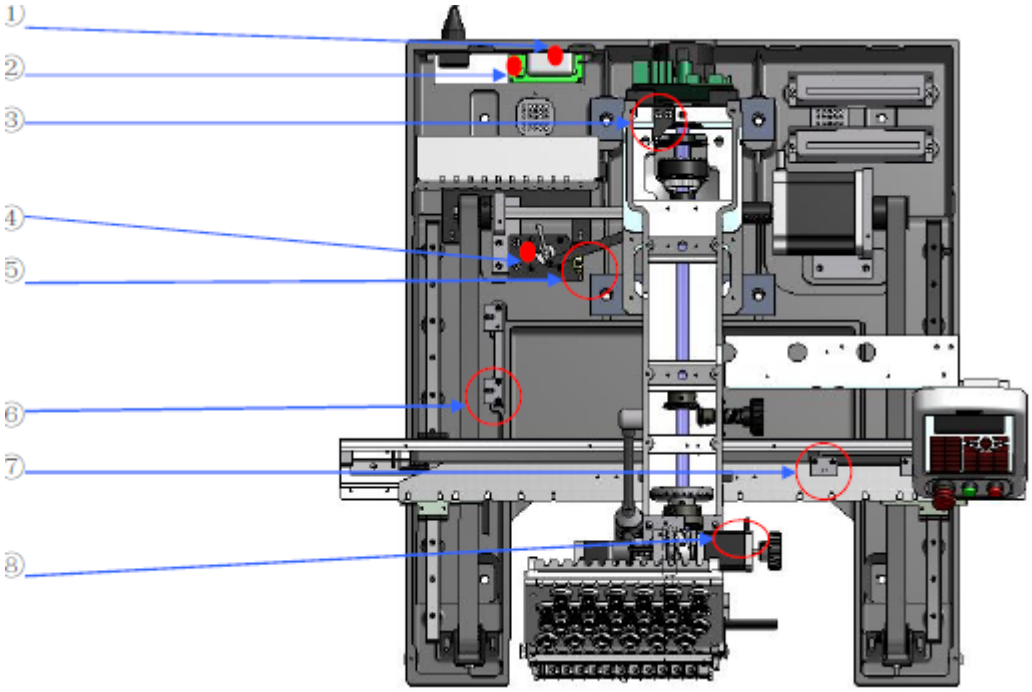
①——断线检测光偶 （面线断线检测）
②——液晶显示屏（页面显示）
③——USB 接口板 （数据输入、输出）
④——主板（控制机器）
⑤——向电机（驱动 X 向运动）
⑥——多功能板（信号转接）
⑦——开关电源 （为机器提供匹配电源）
⑧——Y 向电机（驱动 Y 向运动）
⑨——XY 驱动器 (驱动 XY 电机)
⑩——主轴驱动器（驱动主轴电机）
⑪——主轴电机（带动主轴）
⑫——电源开关板（电源开关）

1. Thread-break detection optical coupler (upper thread break detection)
2. LCD (page display) 3. USB interface board (data input and output)
4. Main board (control machine) 5. Motor (driving X-direction motor)
6. Multifunction board (signal transfer) 7. Switch-mode power supply (provide appropriate power supply for machine) 8. Y-direction motor (Y-direction movement)
9. XY driver (drive XY motor) 10. Spindle driver (drive spindle motor)

11. Spindle motor (drive spindle) 12. Power switch board (power switch)

4. 电气部位各部件名称及作用（二）;

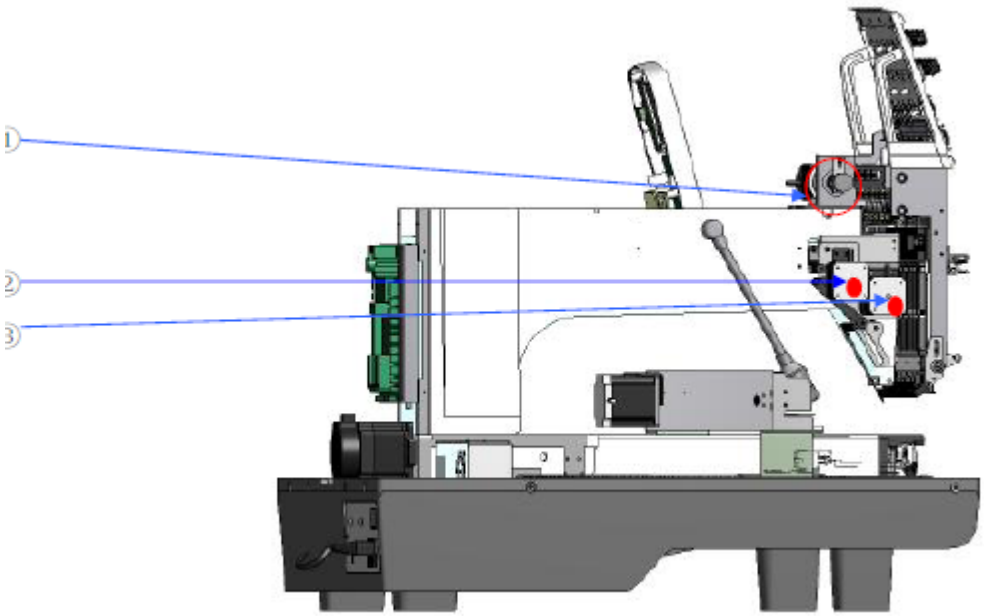
4. Name and function of each electrical part (II);



1. Filter (restrain interference) 2. Network interface board (communicate with PC)
3. Zero position optical coupler (sense the parking position)
4. Tread-cutting motor (drive trimming mechanism)
5. Approximate switch (sense the tread-cutting position)
6. Y-direction limit optical coupler (detect Y-direction position)
7. X-direction limit optical coupler (detect X-direction position)
8. Color changing motor (drive the color-changing mechanism)

5. 电气部位各部件名称及作用（三）;

5. Name and function of each electric part (III);



①电位器——（检测针位）

②勾线电机——（勾线）

③跳跃电机——（使驱动块与针针连接销脱离）

1. Potentiometer (detect needle position)
2. Thread hooking motor (thread hooking)
3. Skip motor (disengage drive block from needle-to-needle connecting pin)

机器的日常保养

1.机器外部、线盘、线架、过线器的清洁。

当机器、线盘、线架、过线器表面变脏时，请用柔软的干布擦拭，如果严重变脏时，用布沾湿中性溶剂，拧干后擦拭表面。然后再用干布将其擦干。

- 清洁时前请拔出电源线，否则可能会导致受伤或触电。
- 请勿使用化学制品，如笨或稀释剂。
- 线架及过线器比较难清洁的地方请用随机配送的毛刷清洁。
- 过线部分请务必保持清洁，否则会导致断线。
- 清洁时间随工作环境而定，一般为 2 - 7 日一次

Daily machine maintenance

1. Cleaning the outer part of machine, thread coil, thread stand and thread guide

When the machine, thread coil, thread stand and thread tension basesurface becomes dirty,

wipe it with soft dry cloth; if there are stubborn stains, use the cloth with wet neutral solvent, dry it and wipe the surface, and then clean surface with dry cloth.

●To prevent possible injury or electric shocking, it is required to unplug power cord prior to cleaning.

●Do not use chemical solvents such as benzene or diluents.

●For the part of thread stand and thread tension basedifficult to clean, please clean with the attached brush.

●The threading guide part should be kept clean to prevent thread break.

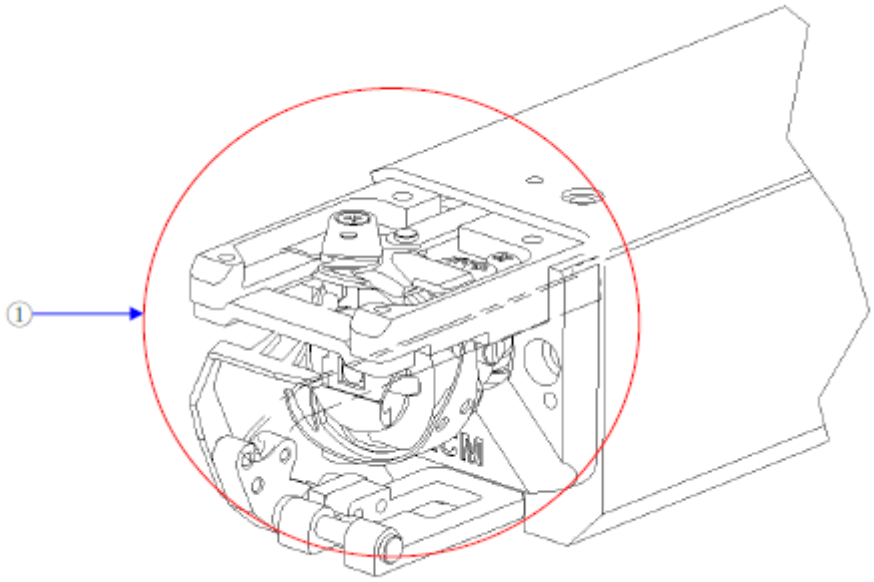
●Cleaning cycle should be dependent on the working environment, generally once every 2-7 days.

2.工作时机器的机器日常加油与维护。

机器工作满 40 小时，请打开针板并用配送小毛刷清洁旋梭及剪线部位的毛绒及线头。

2. Daily oiling and maintenance for machine in service

After 40h working period, open the needle plate and clean the rotating hook with the attached small brush, remove the plush and lint on the trimming position.

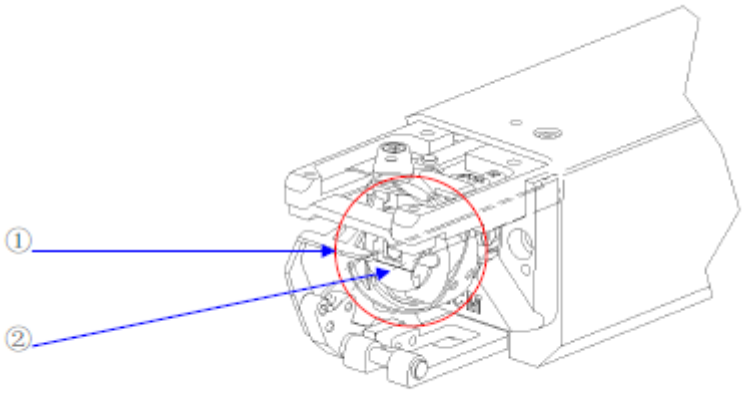


①旋梭及剪线部分

1. Rotating hook and trimming part

每天工作前请为旋梭 2 滴机油如图所指：

Apply 2 drops of engine oil to the rotating hook prior to daily working, as shown below:

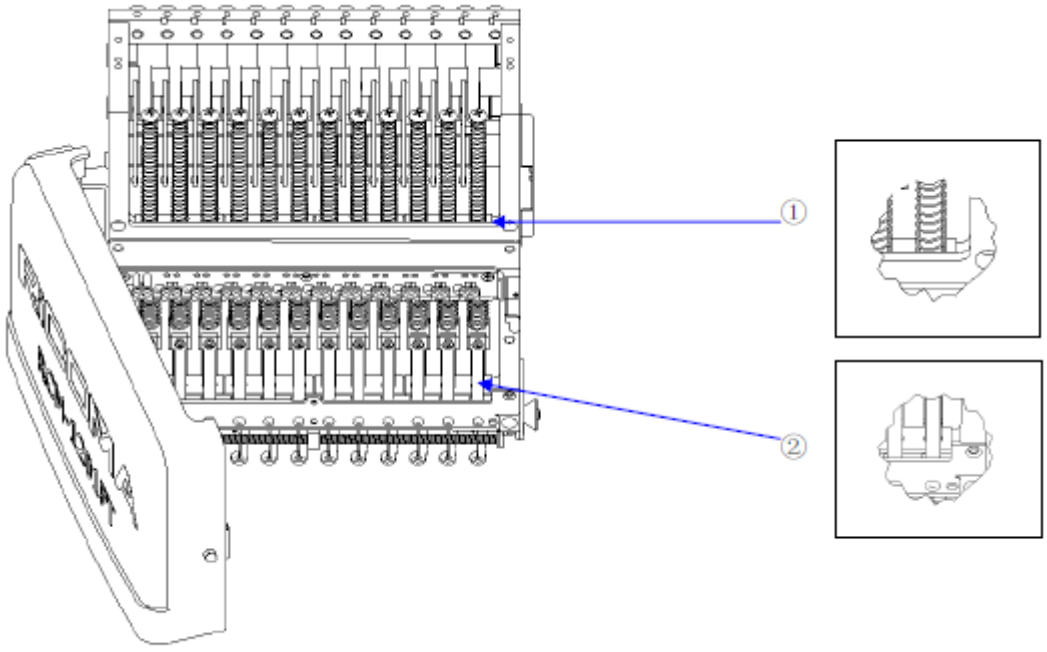


①——旋梭部分　　②——加油位置

1. Rotating hook　　2. Oiling position

机器每工作 30 小时为每根工作针杆加机油 2 滴

Apply 2 drops of oil to each needle bar once every 30h of work

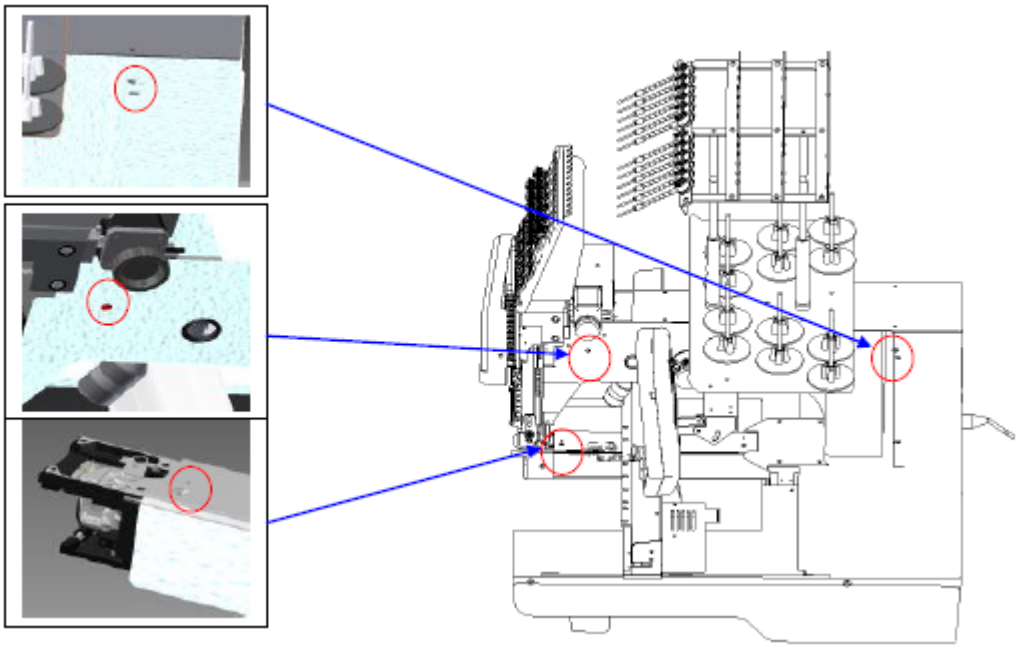


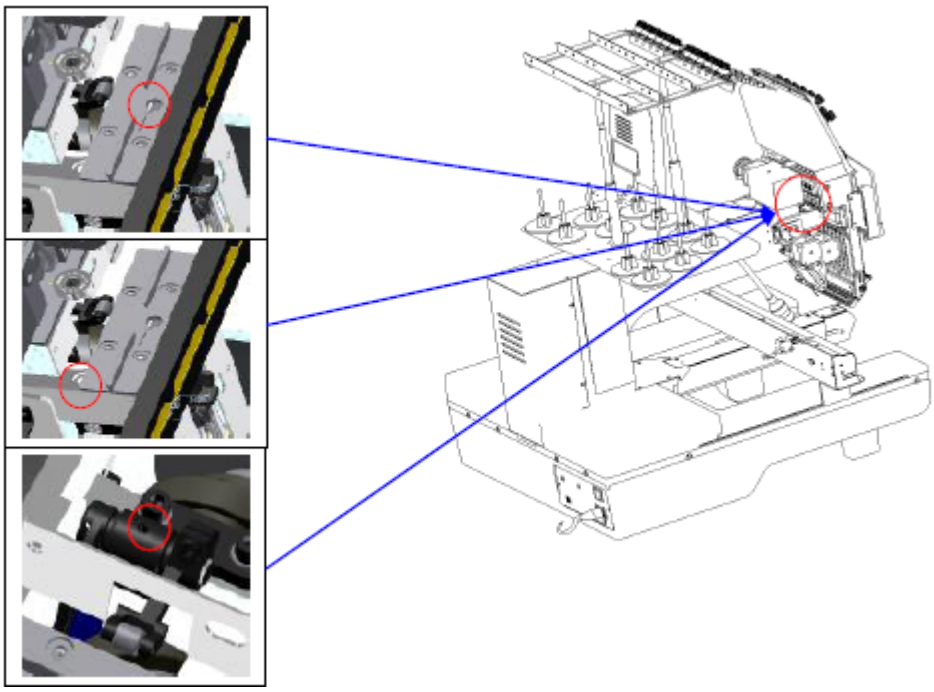
①——在此加机油　　②——在此加机油

1. Oiling position　　2. Oiling position

每两天为以下部位各加机油 5 滴

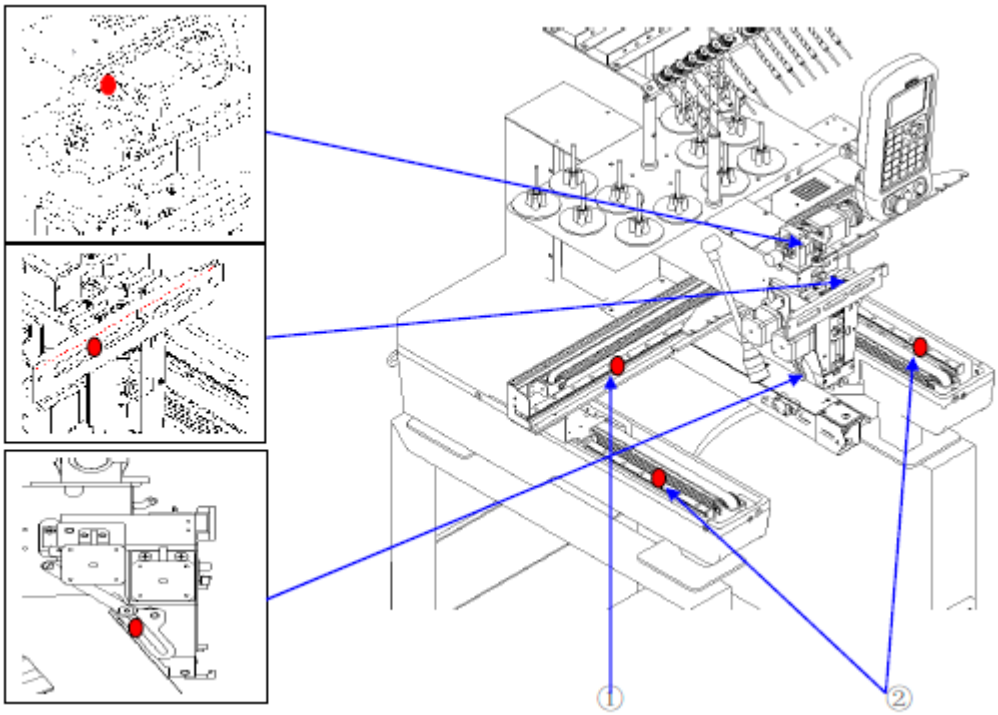
Apply 5 drops of oil to each of following parts twice a day:





每三个月为以下各部位用毛刷清洁并加润滑脂一次：

Clean following parts with brush and lubricate them once every three months:



①——X 向导轨

②——Y 向导轨

1. X-direction guide rail
2. Y- direction guide rail

注意：

- 本机中使用的机油只能使用缝纫机机油，使用其它类型的机油可能会损坏机器。
- 本机中使用的润滑脂为 2 级以上粘粘性固态油脂。
- 请勿加过多的机油，否则布料或线可能会被污染，如果使用过多请用抹布将多余的机油擦干。
- 如果在刺绣过种中，发生断线或旋梭运行噪音过大，请在旋梭上加机油。

Note:

●Only the sewing machine oil is applicable for the machine, and the oil of other types may cause possible machine damage.

●The lubricating grease for the machine is the sticky solid grease of grade 2 above.

●The application of excess of oil may contaminate the cloth or thread, and it is required to wipe out the excess with cleaning cloth.

●To apply oil to the rotating hook in case of thread break or large noise during embroidery.

常见的报错信息及处理

I.主轴不在 100 度

原因一:
未正常关机,
如果你要停止工作时，请勿直按使用急停开关直接关机或直接关电源，这样操作可能会导致机器
员坏。关机时应先按下停止键再关闭电源。
解决方法：
点动或手动转主轴手柄到 100 度，然后再开始工作。

Common error and treatment

1. Spindle isn't at 100 degrees

Cause 1:

Failure to shut down normal condition

Do not stop working by directly pressing emergency stop switch or powering off, which may cause machine damage. It is required to press down Stop prior to power-off.

Solution:

Press inching key or manually rotate spindle handle to 100 degrees and then start working.

原因二：
因急停开关被按下去清除信息后出现的主轴不在 100 度。
● 这种情况下通常在开机时会先出现急停，按 CL 清除键后出现主轴不在 100
解决方法：
把急停开关复位后，点动或手动转动主轴手柄到 100 度，然后再开始工作。

Cause 2:

Spindle is not at 100 degrees when emergency stop switch is pressed down and information is cleared.

●Generally emergency stop will occur when machine is started, and spindle will be not at 100 degrees after CL key is pressed.

Solution:

After resetting emergency stop switch, press inching key or manually rotate spindle handle to 100 degrees and then start working.

原因三：
机器在断电状态转动过主轴或突然断电而出现的主轴不在 100.
解决方法：
按点动键或手动转动主轴手柄到 100 度，然后再开始工作。

Cause 3:

Machine spindle is rotated under power-off state or spindle is not at 100 degrees due to abrupt power failure.

Solution:

Press inching key or manually rotate spindle handle to 100 degrees and then start working.

原因四：
零位光偶受干拢或损坏。
解决方法：
更换新的零位光偶。

- 如以上问题都不存在，且每次按点动键主轴都不能停在同一停置（显示屏上每次显示的度都不一致）时，可能是零位光偶损坏。

Cause 4:

Zero position optical coupler is interfered or damaged.

Solution:

Replace the optical coupler with a new one.

●Zero position optical coupler may be damaged if above problems are not found and the spindle remains not at the same position (different degrees displayed on screen) after each press on inching key.

2.主轴不转
原因一：
机械卡死。
检测方法：
用手转动主轴手柄，如果转动时遇明显阻力或转不动时，说明该问题是机械卡死：如转动顺畅则会是其它问题。
解决方法：
排除阻力使机器运行顺畅

2. Spindle fails to work

Cause 1:

Mechanical sticking

Detection method:

Manually rotate spindle handle, if it is obviously difficult to rotate or cannot move it, there will be mechanical sticking; if it can be smoothly rotated, there will be other problems.

Solution:

Remove resistance to keep machine running smoothly.

- 常见阻力点一：旋梭被线卡死。
  解决办法：清理线头并为旋梭加油
- 常见阻力点二：针杆加部位被卡死
  解决办法：因机器长时间缺油导致机器磨损或生锈而导致针杆被卡死，需更换针杆并为机器加油。
- 常见阻力点三：机头部零件损坏或缺油导致卡死。
  解决办法：更换损坏零件，并为机器加油。
- Common resistance point 1: rotating hook is stuck by threads.

Solution: remove threads and apply oil to rotating hook.

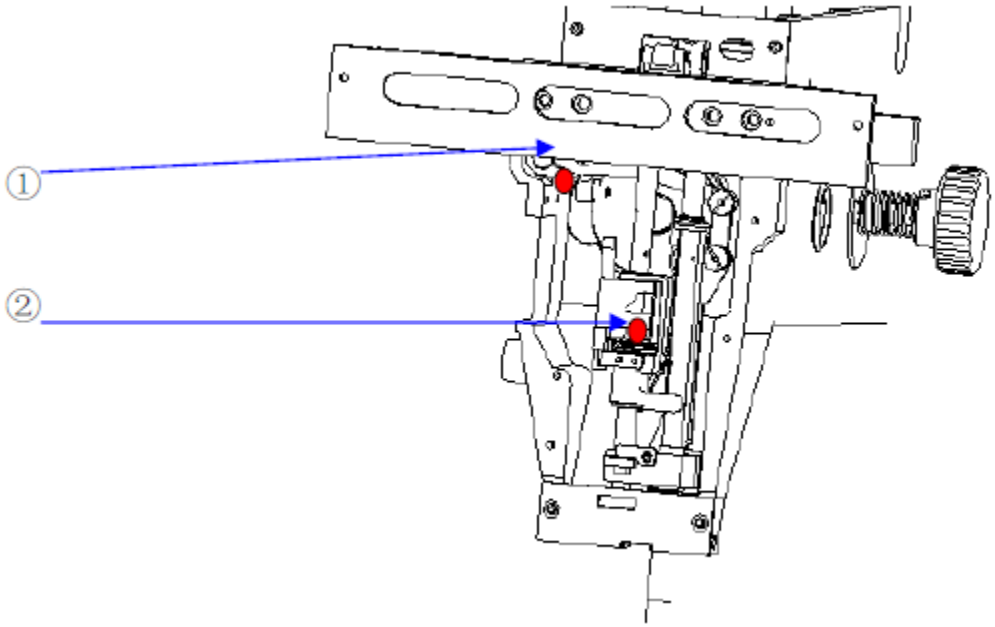
- Common resistance point 2: needle bar is stuck.

Solution: Needle bar should be replaced and machine oiled as needle bar is stuck due to machine wear or rust because of long-term shortage of oil.

- Common resistance point 3: Machine head part is damaged or stuck due to shortage of oil.

Solution: replace the damaged parts and apply oil to the machine.

The part of machine head likely subject to problems is shown as below:



①——压脚驱动轴　　②——针杆驱动器

1. Presser foot drive shaft　　2. Needle bar drive shaft

原因二：

主轴驱器损坏或受干扰

判断方法：

查看主轴驱动器，是否亮红灯。如果亮红灯则证明主轴驱动器出现故障。

Cause 2:
Spindle drive is damaged or interfered.

判断方法：

查看主轴驱动器，是否亮红灯。如果亮红灯则证明主轴驱动器出现故障。

Judgment method:
Inspect spindle drive for red light. Illuminated red light represents spindle drive failure.

解决方法：

- 如果主轴驱动器偶尔亮红灯，可能是你使用的电网内不稳定造成的。请关闭机器后重新上电开始工作。
- 如果你的机器主轴驱动器经常亮红灯，请更新的主轴驱动器。
- 如果你使用的电网内电压不稳定，可能会经常导致主轴驱动器亮红灯。请在你的电源输入处加上隔离式变压器。

Solution:

● If spindle drive red light is occasionally illuminated, please shut down machine and repower on since there may be an unstable power grid.

● If spindle drive red light is frequently illuminated, replace the spindle drive.

●As the unstable voltage of power grid may frequently cause the spindle drive red light illuminated, please provide an isolation transformer at the power input.

下图为主轴亮红灯：

As shown below, the spindle red light is illuminated:

原因三：

信号线接触不良或接头松动。

解决方法：

检查主轴驱器与主轴驱动到多功能板上的每一条线的接头是否松动，每条线与否与插芯脱落或断开，如有请急时修复。

Cause 3:

Poor contact of signal line or loosening connector

Solution:

Inspect the connector of each wire of spindle drive as well as from spindle drive to multifunction board for loosening, and check if the wire is disengaged from or disconnected with ferrule, if any, please repair it in a timely manner.

- 通常建议把每条线拔下来认真检查后再重新插回到原位

Generally, it is recommended to unplug each wire for careful inspection and re-plug.

原因四：

因急停开关被按下去清除信息后出现的主轴不转

● 这种情况下通常在开机时会先出现急停，按 **CL** 清除键后出现主轴不转

解决方法：

把急停开关复位按 **CL** 键清除报错，然后再开始工作。

Cause 4:

Spindle fails to work when emergency stop switch is pressed down and information is cleared.

●Generally emergency stop will occur when machine is started, and spindle will not work after CL key is pressed.

After resetting emergency stop switch, press CL key to clear error report and then start working.

原因五：

主轴电机编码器损坏

判断方法：

进入系统测试（主轴电机编码器自检）查看主轴脉冲是否是 1000 正负 1 为正常，超出请更换主轴电机。

解决方法：

请更换主轴电机。

Cause 5:

Spindle motor encoder is damaged.

Judgment method:

Conduct system testing (self-checking of spindle motor encoder) to inspect if spindle pulse is within the range of 1000±1, if not, replace the spindle motor.

Solution:

Replace the spindle motor.

原因五：

无电源输入到主轴驱动器。

解决方法：

查看主轴驱动器上的灯是否点亮，如点亮说明输入电源正常：如不亮灯，请检查输入电源。

Cause 6:

No power input to spindle drive

Solution:
Inspect the spindle drive light. The illuminated light represents normal power input, or otherwise inspects the input power.

3.主轴反转

原因：

主轴发抖

3. Spindle CCW
Cause:
Shaking spindle

问题现象：

机器工作中，机针出现发抖后，屏幕上出现主轴反转。

解决方法：

- 机器工作时遇机械卡死，检查并排除。
- 主轴驱器损坏（一般驱动器会亮红灯），请更换主轴驱动器。

Phenomenon:
When needle bar shakes during machine operation, spindle CCW is displayed on screen.
Solution:
●There may be mechanical sticking during machine operation, inspect and troubleshoot problems.
●Spindle drive is damaged (generally the red light of drive will be illuminated), please replace the spindle drive.

4.换色超时

4. Color changing overtime

原因一：

换色电机不转（执行换色时电机不转动）

解决方法：

- 电机线插头脱落，请检查换色电机的对接头和多功能板的插头是否脱落，如发生脱落请重新插上。
- 电机插头处的插芯松动、脱落，请重新插入并接好。
- 多功能板处于保护状态，请关机一分钟后重新上电。
- 换色电机损坏（这种可能性较小），请更换电机。

Cause 1:
Color changing motor fails to work (Motor fails to work when performing color changing)

Solution:

●Motor wire plug is disengaged, please inspect if the butt joint of color changing motor and the plug of multifunction board has been disengaged. If any, re-plug it.

●The ferrule at motor plug has loosened or come off, re-plug and connect it.

●The multifunction board is under protection state, power on after one minute of power-off.

●The color changing motor is damaged (with least possibility), please replace it.

原因二：

电机转到尽头并发出异响。

问题现象：

执行换色操作时，换色电机跑到尽头并发出异响后停止并报错换色超时

Cause 2:

Motor runs to the end and makes noises.

Phenomenon:

When performing color changing, the motor stops working after running to the end and making abnormal noise, and then report the color changing overtime.

解决方法：

- 因为拆过针杆架或换色电机重新安装后，未重对准针位。通常在显示区显示的针位与实际有针数不符。如出现这种情况，请重新调节电位器。
- 电位器损坏，显示屏上不能显示针位，请更换电位器。
- 换色过程中挑线未回到正确位置，请手到把挑线杆掰回原位。
- 电位器连接线松动接触不良，检查并重新连接。

Solution:

● Needle position is misaligned after dismantlement of needle bar frame or reinstallation of color changing motor. Generally, the needle position displayed in the display area is not consistent with the actual number of needle. If so, readjust the potentiometer.

● Potentiometer is damaged and the needle position is not displayed on the display screen, please replace it.

● The take-up thread fails to return to the correct position during color changing, please push the take-up lever to original position manually.

● The potentiometer connecting line of poor contact due to loosening, check it and reconnect.

5.针位不到位。

5. Poor needle positioning

原因一：

因运输、振动或人为转动换色手柄而造成，通常新机开机时会出现这种问题。

解决方法：

手动转动换色手柄，直到显示屏上显示器上针位为止（这种问题比较常见，转动手柄时一定要注意缓慢转动换色手柄以免错过位置）。

Cause 1:
Poor needle positioning may be caused by transport, vibration or manual color changing, which is quite normal during startup of new machine.
Solution:
Manually rotate color changing handle until the needle position is displayed on the display screen (which is quite normal, it is recommended to rotate the handle carefully to prevent missing the correct position).

原因二：

电位器线接触不良。

解决方法：

检查线路，如发现接触不良请重新连接。

Cause 2:
Potentiometer lines are of poor contact.
Solution:
Inspect the line for poor contact, if any, reconnect it.

原因三：

电位器损坏.

解决方法：

如一直旋转换色电机手柄都不能显示出针位，经检查无线路接触不良问题，可能是电位器损坏，请更换。

Cause 3:
Potentiometer is damaged.
Solution:
If needle position is not displayed after continuous rotation of color changing motor handle and no poor contact is found for lines, please replace the potentiometer which may be damaged.

6.剪线不到位

6. Poor thread trimming

原因一：

剪线后没有停到正确的位置。

解决方法：

按 ESC 键后电控会自动提示是否复位，按确认键后电机会自动回到原位。

Cause 1:
Failure to stop at the correct position after thread cutting
Solution:
After pressing ESC, the electric control device will automatically prompt if resetting is required, press RESET, motor will automatically return to original position.

原因二：

微型接近开关损坏。

解决方法：

如果发现机器每次执行复位操作时，电机都在转动但是每次都停不到正确的位置时，可能是接近开关损坏，请更换。

Cause 2:
Mini approximate switch is damaged.
Solution:
If motor keeps rotating while fails to stop at the correct position when performing resetting, please replace the approximate switch which may be damaged.

原因三：

剪线电机不转

解决方法：

打开后盖后如果发现机器每次执行剪线或复位操作时，剪线电机都不转动，请更换电机或检查电机线路是否有问题。

Cause 3:
Thread cutting motor fails to work.
Solution:
After opening the rear cap, the thread cutting motor is found failure to work when performing thread cutting or resetting, please replace the motor or inspect motor lines for any problems.

7.+X 限位错误

- X 限位错误

+Y 限位错误

- Y 限位错误

7. +X limit error, －X limit error, +Y limit error and -Y limit error

原因一：

移框到绣框的边缘

解决方法：

按 ESC 键后反方向移动绣框。

Cause 1:
Move to the rim of tabouret
Solution:
Press ESC and move the tabouret in the opposite direction.

原因二：

选择的绣框类型与使用的绣框不符

解决方法：

重新选择与你使用的绣框相同的绣框

Cause 2:
The selected tabouret type is not consistent with the used one.
Solution:
Select the babouret of correct type.

原因三：

错误设置过绣框限位。

解决方法：

- 重新设置绣框软件限位
- 取消绣框软件限位（解除软件限位的方法是：进入软件限位功能进行设置，当软件提示你移动绣框时，不要移动绣框把两个点设成一个点后限位功能取消）

Cause 3:
Wrong setting of tabouret limit
Solution:
- Reset the tabouret software limit
- Cancel the tabouret software limit (Lift the software limit: complete setting by using the

software limit function, and do not move the babouret and cancel the limit function after setting two points as one when you are prompted by the software to move the babouret).

原因四：

断电后绣框被人为移动过后限位原来的位置发生变化

解决方法：

按帽绣与成衣绣切换键连续两次后正常工作。

Cause 4:
Tabouret is manually moved after power-off, and the original limit position has been changed.
Solution:
After pressing the proper key in two consecutive times to switch between cap embroidery and ready-to-wear embroidery, start normal working.

8.金片针位错误

8. Wrong sequin position

原因一：

金片针杆设置错误。

解决方法：

重新设置换色顺序，把带有金片码的颜色必须设成带有金片的这枚针杆。

Cause 1:
Wrong setting of sequin needle bar
Solution:
Reset the color changing sequence, the sequin needle bar should be set with the color with sequin number.

原因二:

金片装置未安装或对接头没有插好。

解决方法：

安装金片绣装置或检查插头是否插好。

Cause 2:
Sequin device has not yet installed or the butt joint has not been properly plugged.
Solution:
Install the sequin device or inspect the plug.

原因三：

你使用的机器没有安装金片装置，但是你使用的花版中有金片码。

解决方法：

更换或重做花样。

Cause 3:
The machine is not provided with sequin device, while your embroidery pattern is designed with sequin code.
Solution:
Replace or rework the embroidery pattern.

9.XY 驱动器出错

9. X, Y driver fault

原因：

XY 驱动器工作时亮灯。可能是 X Y 驱动器损坏或过流过压保护

解决方法：

检查 X Y 驱器线路并重新上电，如还不能解决问题请更换 XY 驱动器。

Cause:
Light is illuminated when XY drive is working, which may be resulted from the damaged XY drive or over-current and voltage protection.
Solution:
Inspect XY drive lines and re-power on, if the problem isn't solved, please replace XY drive.

10.紧急停车

10. Emergency stop

原因一：

急停开关被按下。

解决方法：

右旋急停开关，让其复位后再操作。（注意：如需关机时请先按停止键后再关掉电源，禁止使用急停开关直接关机）

Cause 1:
Emergency stop switch is pressed down.
Solution:
Rotate emergency stop switch towards the right until resetting is completed, and then start working (note: if need to shut down, it is required to press Stop prior to power-off and

forbidden to shut down directly by pressing the emergency stop switch).

原因二：

急停开关损坏..

解决方法：

更换急停开关。

Cause 2:
Emergency stop switch is damaged.
Solution:
Replace it.

机器的常见状况及处理

Common machine state and treatment

一、断线

I. Thread-break

1.针与旋梭配合间隙不对，针位置太高或太低——需要重新调节。（具体调试方法请参照针位调试方法 P 50. ）

2.过线部分不顺滑。

- 绣花线相互缠绕——重新整理绣花线。
- 线架孔有异物堵塞——清理异物并让过线孔光滑。
- 线脱离线道——重新整理绣花线。
- 线道部分零件损坏——检查并更换。

1. Wrong clearance between the needle and rotating hook due to too high or low needle position—— readjustment is required. (Refer to the Needle Position Adjustment Method in P50 for detailed adjustment methods).
2. Unsmooth thread guiding
●broidery threads are intertwined- rearrange embroidery threads.
●Thread stand hole is blocked by foreign matters – remove foreign matters and make the thread guiding hole smooth.
●Thread is away from the thread path - rearrange embroidery threads.
●Parts on the thread path are damaged – check and replace them.

3.压脚太高——重新调节压脚高度，把机器转到 172 度，让针板与压脚这间的间隙为 0.8mm-1.8mm。

4.使用金属线时断线——请降低机器转速。

5.底线张力不正确，线未顺利梭壳中穿过——重新安装底线并调节线的张力。

3. Too high presser foot—— readjust the height of presser foot. To allow the machine at 172 degrees to maintain the clearance between needle plate and presser foot within 0.8mm - 1.8mm.
4. Metallic threads are broken – reduce machine speed,
5. Incorrect lower thread tension. Threads fail to pass through the bobbin case – reinstall the lower threads and adjust its tension.

6.梭芯线绕线不正确——确认梭芯线绕线时大约为 8 0 %并且线已均匀缠绕。如果梭芯未正确绕线，请更换一个正确绕线的梭芯或将梭芯重新绕线。

7.花版的针迹太小——降低转速或更改花。

8.花版有 3 个或以上的部分得重叠有一起的针迹——修改花版数据。

6. Incorrect bobbin thread winding – Be sure about 80% of bobbin threads are evenly wound. If threads are not incorrectly wound on the shuttle core, please replace with a new one with correct winding or rewind on the shuttle core.
7. Too small needle mark on embroidery pattern – decrease rotation speed or change the pattern.
8. Three or more than three overlapped needle marks on embroidery pattern – change the embroidery pattern data.

9.针的相关问题.

- 针质量不好，针槽，孔抛光不好，针尖钝——更换优质针
- 针安装不正确——重新安装（安装时应注意针上的槽对正机器的正前方）
- 针弯曲，安装不到位——重新安装，安装时请将针顶到针杆的最顶端
- 针孔中有附着物（如胶）——清理或更换
- 针的固定螺丝位置不对——调整到向右偏 30 度

9. Needle-related problems
●Poor quality needle with poor needle groove, aperture polishing and blunt needle point – replace with a high quality needle.
●Incorrect needle installation – reinstall (needle groove should be positioned directly in front of the machine.
●Curved needle due to bad installation – reinstall and allow the needle against the top end of needle bar.

●Attachment inside needle (such as the glue) – clean or replace it.
●Incorrect position of set screws to the needle – adjust to the right 30 degrees.

10.线的相关问题。

- 线的质量差——更换优质绣花线
- 线与针的号不配套——请使用专门的绣花线，请勿使用绵线。
- 面线张力太大——请重新调节线的张力

10. Thread-related problems
●Poor quality treads – replace with high quality embroidery threads
●Threads are not consistent with the needle count – use the correct embroidery threads but the cotton threads.
●Excessive high upper thread tension – readjust thread tension

11.与孔的相关问题

- 针板孔周围区域被损坏——重新抛光或更换针板
- 针触到针板——请重新调节下针的中心位置
- 压脚周围有毛刺或损坏——重新打磨压脚孔及周边或更换

11. Hole-related problems
●Peripheral region around needle plate hole is damaged – repolish or replace the needle plate
●Needle in contact with needle plate – readjust the stitch position
●Peripheral region around presser foot is burred or damaged – polish the presser foot hole and its peripheral region or replace it.

12.旋梭的相关问题。

- 旋梭上有划痕——重新抛光或更换
- 梭壳表面有划痕——磨光或更换
- 梭壳、旋梭变形——更换新的梭壳或旋梭
- 润滑不良——加油

12. Rotation hook-related problems
●Scratch on rotation hook –polish or replace it
●Scratch on bobbin case surface - polish or replace it
●Deformed bobbin case or rotation hook – replace with a new bobbin case or rotation hook
●Poor lubrication – apply oil

13.针与旋梭的位置变了——调整针与旋梭的位置

13. Position of needle and rotation hook has been changed – adjust their positions.

二、断针：

II. Needle break

1.旋梭与机针前后间隙过小或没有间隙。（具体调试方法请参照旋梭调试方法 P 60.）

- 把机器转到 195 度时，当针与旋梭尖的平面重合时，用手推动针尖查看间隙是否是在 0.1mm-0.3mm之间，如间隙太小或没有间隙请重新调节旋梭。
- 机针弯曲导致针与旋梭前后间隙过小，请重新更换新的机针。

1. Too little or no clearance between rotation hook and needle. (Refer to the Rotation Hook Adjustment Methods in P60 for detailed adjustment methods).

●Allow machine at 195 degrees, and when the needle is coincided with the plane of rotation hook point, manually push the needle point to inspect if clearance is controlled within 0.1mm-0.3mm, and readjust rotation hook in case of little or no clearance.

●Little clearance between needle and rotation hook resulted by the curved needle. Replace with a new needle.

2.旋梭位置错误

- 将机器转到 195 度查看机针是否与旋梭尖上的小平面重合，如果没有重合请重新调节旋梭的位置。（具体调试方法请参照旋梭调试方法 P 60.）
- 面线卡在旋梭中导致旋梭走位，请清理线头并重新调节旋梭。

2. Wrong rotation hook position

●Allow the machine at 195 degrees to check if the needle is coincided with the small plane on rotation hook point. Readjust the position of rotation hook if no coincidence. (Refer to the Rotation Hook Adjustment Methods in P60 for detailed adjustment methods)

●Rotation hook stuck by upper threads is dislocated, please remove threads and readjust rotation hook.

3.针夹螺丝梭动

- 更换机针，并把螺丝重新打紧。如螺丝损坏或滑牙请更换新的针夹。

4.压脚孔、机针与机板孔没有对准。

- 压脚因外力碰撞原因导致弯曲变形，下针时针扎到压脚上，请更换新的压脚。
- 因电位器损坏或错位导致机针无法对准针板孔而断针，请重新调节电位器（具体调试方法请参照电位器调试方法 P 70 ）
- 因换色电机位置发生走位导致机针没有对准针孔，请重新调整换色装置的位置使机针对准针孔。（具体调试方法请参照换色装置的调试方法 P 80 ）

3. Shuttling needle clamp screws

●Replace the needle and tighten screws. Replace with a new needle clamp if screws are damaged or stripped.

4. Presser foot, needle and the plate hole is misaligned.

●The presser foot is deformed or curved due to collision by external force, and the needle will be in contact with the presser foot. Please replace with a new one.

●The needle is broken due to misalignment with needle plate hole as the potentiometer is damaged or dislocated, please readjust the potentiometer (Refer to the Potentiometer Adjustment Methods in P70 for detailed adjustment methods)

●The needle is broken due to misalignment with needle plate hole due to color changing motor dislocation, please readjust the position of color changing device to align needle with the needle hole (Refer to the Color Changing Device Adjustment Methods in P80 for detailed adjustment methods).

4.机针质量不好，请更换机针。

5.移框角度不对，请调节刺绣参数的移框曲线和角度。 P T 机的常用值为

移框曲线： F 5

移框角度：220 - 230

4. Replace the needle with poor quality

5. Tabouret movement angle is incorrect, please adjust the embroidery parameters: tabouret movement curve and angle. Commonly used value for PT machine is:

Tabouret movement curve: F 5

Tabouret movement angle: 220 – 230

6.面线张为太大或面线被卡死，请重新调节面线张力或整理面线。

7.花样重叠部份密度过大或重叠部分次数过多，请重新调节花版的密度或重新制作花

8.布料没夹好，工作时抖动过大造成断针，请重新夹好布料。

6. Upper thread tension is too high or stuck, please readjust its tension or rearrange the

threads.
7. The overlapped pattern is of too high density or there are too much overlapping parts, pleas readjust its density or remake the pattern.
8. Cloth material is poorly clamped, and violent vibration during operation will cause needle break, please re-clamp the cloth.

三、毛线：

III. Burred threads:

在刺绣过程中，线未断而开叉，只有一股线在针孔内而其它股都在孔处堆作一处。

1.线的质量差，请更换优质的绣花线。

2.针的位置偏上或针与旋梭的间隙过大。

- 把主轴转到 195 度查看针的位置是否偏上或偏下，如果偏上或偏下请重新调节针的上下位置。
- 把主车转到 195 度查看针与旋梭的位置是否过大，如果过开请重新调节旋梭。

3.过线的线道有毛刺，请重新抛光线道或者更换有问题的部件。

4.旋梭上有毛刺，请用砂布抛光或更换新的旋梭。

Threads are not broken but split during embroidery. Only one strand of threads remains inside needle hole and others are piled near the hole.
1. Please replace the threads of poor quality with high-quality ones.
2. The needle is too upward or the clearance between needle and rotation hook is too large.
●Allow spindle at 195 degrees to inspect if the needle is too downward or upward, if so, readjust its position.
● Allow spindle at 195 degrees to inspect if the clearance between needle and rotation hook is too large, if so, readjust the rotation hook.
3. Burrs are found inside the thread guiding channel, please polish the courseor replace the faulty parts.
4. Burrs are found on the rotation hook, please polish with sand cloth or replace with a new one.

四、断线检测不良

IV. Poor thread-break detection

1.光偶未对准挡光片的中间，请得新调节断检光偶的的位置。

2.面线跳出过线轮，请得新整理面线。

3.面线被卡住，请重新整理面线。

4.底线没有放置正确，请重新放置底线。

5.断检检测光偶的感应处有油或被灰尘当住了光偶的开口处，请清理干净油或灰尘。

6.断线检测光偶损坏，请重新更新的断线检测光偶。

1. Optical coupler fails to align with the center of light barrier, readjust the position of break detection optical coupler.
2. Upper threads are out of the thread course wheel, please rearrange the threads.
3. Upper threads are stuck, please rearrange the threads.
4. Lower threads are not properly positioned, please reposition the threads.
5. The opening of break detection optical coupler for sensing is blocked with oil or dust, please remove them.
6. Thread break detection optical coupler is damaged, please replace with a new one.

五、跳针

1.针的质量太差、针不直楊针尖钝，请更换优质的针。

2.针尖与旋梭的位置太开，请重新调节旋梭，使其达到最佳位置。

3.针位置过高，把主轴转到 172 度针孔应露出旋梭内径的 1/2 针眼位，否则请重新调节针杆的上下位置。

4.面线和底线的张力配合不对，请调整面线的底线的张力。

5.被绣物品未固定紧，绣作时绣品抖动过大，请重新固定被绣物品。

6.跳跃电机被卡住，请排除跳跃电机的障碍。

7.驱动块被卡住，请排除障碍或更换新的驱动块。

8.压脚弹簧无力或压脚过高，请重新更换压脚弹簧或重新调节压脚。

9.旋梭损坏请更换新的旋梭。

V. Skip stitching
1. Needle is of poor quality, curved or blunt, please replace with a high-quality one.
2. Needle point and rotation hook is too widely separated, please readjust ration hook until reaching optimal position.
3. The position of needle is too high, allow the spindle at 172 degrees to expose 1/2 needle eye of internal diameter of rotation hook, or readjust the position of needle bar.
4. Improper upper and lower thread tension, please adjust their tension.
5. The material to be embroidered isn't fastened and the embroidery is evidently shaken,

please fasten the embroidering article.
6. Jump motor is stuck, please remove motor fault.
7. Drive block is stuck, please remove the fault or replace with a new one.
8. Presser foot spring is of insufficient spring force or presser foot is too high, please replace the presser foot spring or readjust the presser foot.
9. Rotation hook is damaged, please replace with a new one.

六、抛线、浮线

VI. Hump and float stitch

1.面线张为过小，请调整面线的张力

2.底线张力过小。请调整底线的张力

3.线的质量差，请更换较好的绣花线。

4.底线张力不均匀，请清洁梭壳或更换新的梭壳

5.旋梭润滑不良，请为旋梭加油。

6.不同的布料线的张力都要做出不同的调整

1. Upper thread tension is too low, please adjust its tension.
2. Lower thread tension is too low, please adjust its tension.
3. Please replace the threads of poor quality with that of high-quality.
4. Lower thread tension is uneven, please clean the bobbin case or replace with a new one.
5. Rotation hook is poorly lubricated, please apply oil.
6. Different tension adjustment should be made for different cloth threads.

七、花样走位

VII. Deformed pattern

1.电气问题

- ＸＹ驱动器出现故障，一般情况下ＸＹ驱动器出现故障时ＸＹ驱器会自动报警，此时请关机后重新启动绣花机，如果出现驱动器经常报警（亮红灯）请更换ＸＹ驱动器，如果偶尔一次出现，可能是你所用的电网干扰，而机器可以正常使用
- 电网电压不稳，波动幅度太大，请加装性较好的隔离式变压器。
- 电网干扰，电机、其它电气原件或接线处漏电，引起的干扰。需找到干扰源，并排除干扰。
- Ｘ、Ｙ步进电机故障，检查并更换步进电机
- Ｘ、Ｙ驱动器信号线受到干扰或信号线脱落、断开，请查找干扰源或找出出现问题的信号线并排除
- 花版制板不对，请重新改制。
- 花版在输入时出现干扰，请删除已经输入的花样后，请再次输入。

1. Electric problem

●X,Y drive fault. Generally X,Y drive will automatically alert in case of any failure, in such case, shut down and then restart the embroidery machine; if drive alert frequently occurs (with red light), please replace X,Y drive; if the alert is occasional, which may be caused by the power grid interference, the machine can be normally operated.

●The power grid voltage is unstable with significant fluctuation, please provide the isolation transformer.

●For power grid interference, and the interference caused by the leakage relating to motor, other electric parts or the connection, it is required to find the interference source and remove them.

●X, Y stepping motor fault: inspect and replace the motor.

●X, Y drive signal wire is interfered or disengaged or disconnected, please find the interference source or find the faulty signal wire and remove it.

●Incorrect pattern plate, please rework it.

●There is interference when inputting the pattern, please cancel the input pattern and re-enter.

2.机械问题

一般花样走位时大多是机械部分出现问题，如果遇到这种问题我们先要判断出是X方向（也就是左右方向）还是Y方向（也就是前后方向）出现花样走位，然后我们再重点对走位部位进行检查。机械部位故障走位一般分为：

a.该方向运行时有阻力。一般检查方法是关电后用手匀速慢慢推动绣框，如有阻力，请重点检查并排除阻力。

b.关建部位固定螺丝出现松动。一般检查方法是机器在开机状态，沿走位方向轻轻推动绣框，如绣框在该方向出现晃动则可能是有些部位固定螺丝出现松动，请检查并排除。

c.绣框或被绣物料没有固定好，导致走位，请重新固定。

2. Mechanical problems

Generally, the pattern dislocation is caused for the most part by mechanical problems. In such cases, we should first find out in which direction the pattern is dislocated: X-direction (namely left-right direction) or Y-direction (namely forward-backward direction), and then check the dislocation position. Dislocation at mechanical part normally includes:

a. There is resistance when moving toward a direction. Generally, power off and slowly push the tabouret in a constant speed, if any resistance, check and remove it.

b. Set screw at critical part is loosening. Generally, gently push the tabouret toward the displacement direction when machine is under service state. If the tabouret is shaking during movement, set screws at some positions may be loosening, please check and remove the resistance.

c. Unsecured tabouret or materials to be embroidered may causes dislocation, please fix them.

X向走位的相关问题：

- X驱动连接板固定螺丝松动，请重新固定。
- 绣框支架没有固定好，请重新固定。
- X向被动轮或被动轮轴承损，请更换新的轴承。
- X向皮带过松、过紧或损坏，请重新调节或更换。
- X驱动架与Y向的固定螺丝松动，请得新固定。
- X驱动架与Y向的固定螺丝安装错误（前方两个是M4X8的大圆头十字螺丝，后面两个是M4X6的大圆头十字）导致滑块运行到此处时，出现卡死，请重新安装。
- 有螺丝异物掉进X向驱动内，导致机器运行时受阻，请即时排除并清理。
- X向驱动导轨损坏，请立即更换。

Problems relating to X-direction dislocation:
●X drive connection plate set screws are loosening, please fix them.
●Tabouret frame bracket is not secured, please fix it.
●X-direction driven wheel or driven wheel bearing is damaged, please replace with a new one.
●X-direction belt is too loosening, tightening or damaged, please readjust or replace it.
●Set screws of both X and Y-direction drive shaft are loosening, please fix them.
●Set screws of both X and Y-direction drive shaft are improperly mounted (the two front screws should be M4×8 large round Philip's head screws while the rear two M4×6), which will have the slider stuck here, please reinstall it.
●Screws or some foreign matters drop in the X-direction drive, causing machine blockage, please remove it timely.
●X-direction drive guide rail is damaged, please replace it.

Y向走位的相关问题：

- Y向驱动连接板固定螺丝出现松动，请重新固定。
- Y向同步带轮固定螺丝出现松动，请重新固定。
- Y向被动轮损，请更换新的被动轮。

- Y向轴接套固定螺丝出现松，请重新固定。
- Y同皮带过松、过紧或损坏，请重新调节或更换新的皮带。
- Y向导轨受阻或损坏，请即时排除故障源或重新更换新的导轨。
- 绣框没在正确的安装到绣框支架上，请重新安装。
- 被绣物品装夹时过松，请重新装夹或加纸衬再装夹。
- 被绣物品没有被绣框装夹紧，请重新装夹。

Problems relating to Y-direction dislocation:

●Y-direction drive connection plate set screws are loosening, please fix them.
●Y-direction synchronous pulley set screws are loosening, please fix them.
●Y-direction driven wheel is damaged, please replace with a new one.
●Y-direction bearing collar set screws are loosening, please fix them.
●Y-direction belt is too loosening, tightening or damaged, please readjust or replace it.
●Y--direction guide rail is damaged, please replace it.
● Tabouret is incorrectly mounted on the frame bracket, please reinstall it.
● The embroidery clamp is loosening, please clamp it again or clamp it with paper gasket.
● The embroidery is not securely clamped by the frame, please clamp it again.

八、剪不断线、不剪线、剪线后线头时长时短。

VIII. Failure to cut thread; do not cut thread and trimmed threads are of uneven length

1.剪不断线，我们通常说的剪不断线是指机器执行剪线后，担是线还在绣品上方这时你用手轻轻拔动线依然与绣品连接，这种常见的解决方法有：

- 剪线过后，面线没有被剪断，但是底线却剪断了（剪线动作执动完成后，等机器还没有再次下针工作前将机器停止，此时用手摸一下底线如果底线没有与被绣物品连接则说明底线被剪断了），这种情况请先把动刀的起始角度调小（比原设定位偏小一些）常用值一般在 245 - 280 之间都能正常剪线。
- 剪线过后，面线没有被剪断，但是底线却剪断了（剪线动作执动完成后，等机器还没有再次下针工作前将机器停止，此时用手摸一下底线如果底线没有与被绣物品连接则说明底线被剪断了），如果调完参数后仍然不能解决，请检查针与旋梭间的前后间隙是否大于 0.1mm - 0.3mm之间，如果过大请重新调节旋梭。
- 剪线过后，面线和底线都没有断（剪线动作执动完成后，等机器还没有再次下针工作前将机器停止，此时用手摸一下底线如果底线与被绣物品连接则说明底线没有被剪断了），这种情况请重新调节定刀与动刀的配合。

1. Failure to cut thread. Generally it means the threads are still above the embroidery and attached to the embroidery after trimming, common solutions are provided as follows:

●After trimming, if not the upper but the lower threads are snipped off (after trimming

operation, stop machine prior to the next stitching, touch the lower threads, if threads are not connected with the embroidery, it means threads are snipped off), the start angle of moving knife should be adjusted smaller (than the original setting) and normal trimming will be performed when the commonly used value ranges 245－280.

●After trimming, if not the upper but the lower threads are snipped off (after trimming operation, stop machine prior to the next stitching, touch the lower threads, if threads are not connected with the embroidery, it means threads are snipped off), adjust parameters, if failed, inspect if the clearance between the needle and rotation hook is controlled within 0.1mm－0.3 mm, if not, readjust the rotation hook.

●After trimming, if neither the upper nor the lower threads are snipped off (after trimming operation, stop machine prior to the next stitching, touch the lower threads, if threads are not connected with the embroidery, it means threads are snipped off), readjust the mating condition between the fixed and moving knife.

2.不剪线，一个完整的剪线动作过程是：扣线叉把面线扣住——动刀开始出刀并把线分开，然后把要剪的线勾回去通过与定刀的切合把线剪断——勾线开始工作把已经剪断的面线勾起。所以剪线是由扣线、剪线、勾线共同完成，通常剪不断线的问题有：

- 勾线电机线路接触不良导致勾线电机不工作，请检查线路和接头的连接问题。
- 勾线电机遇到阻力，导致勾线电机不能正常工作，一般情况下在勾线过程中发出"咯"的一声，说明勾线不顺，请找出阻力点并排除。
- 勾线电机勾不到线，当勾线电机动作了，位是面线还是没有勾到，请重新调整勾刀或将勾刀向上掰一点。
- 剪线电机不工作，请检查线路是否有接插不良的现象。
- 定刀与动刀配合不好，剪不断线，发果刀没有损坏，请重新调整定刀与动刀的配合，如果刀已经损坏，请更换新的刀。

2. Do not trim threads. A complete trimming process should be: picker fork picks the upper threads — moving knife separates threads, hook the threads to be cut, and the threads are snipped off through the fit between the moving and fixed knife — the hook start hooking the trimmed upper threads. In short, trimming process consists of the picking, trimming and hooking. Common problems concerning the failure to snip off threads are as follows;

●Hook motor lines are of poor contact, causing hook motor failure, please check lines and connectors for connection.

●Hook motor is blocked, causing motor failure. Generally, a sound of creak will be heard during hooking, please find out the resistance point and remove it.

●Hook motor fails to hook threads. The actuated hook motor fails to hook the upper threads, please adjust the hook knife or push it slightly upward.

●Trim motor fails to work, please check lines for poor insertion.
●Threads are not snipped off due to poor fit between the fixed and moving knife, if no knife damage is found, please readjust their fit; if the knife is damaged, replace with a new one.

3.剪线过后线头过长或过短。

- 参数调节不当，请调节刺绣参数中的剪线长度
- 扣线电磁铁不工作，请得新更换新的电磁铁。
- 扣线叉扣线的位置不正确或工作受阻，请重新调节扣叉或检查并排除阻碍。

3. Trimmed threads are of uneven length
●Improper parameter adjustment, please adjust the trimming length among embroidery parameters.
●Picking electromagnet fails to work, please replace with a new one.
●Picking position is incorrect or the picker is impeded during operation, please readjust picker or check it to remove faults.

九、主轴转不动。

IX. Spindle fails to work

1.旋梭卡线，如果旋梭被线卡住，可以先用手左右拔动旋梭芯如果能左右拔动，说明没有卡线，反之说明旋梭可能被卡死，请清理旋梭线头并为旋梭加油后再工作。

2.针杆卡死，因针杆较长时间未加油或针杆被胶制品粘住，请清洁完成后为针杆架油，一定要保证针杆运行是畅通无阻。

3.压脚驱动器轴因长时间没有加油生锈而导致卡死，请更换新的压脚驱动器轴，并保持经常为机器加油。

1. Rotation hook is stuck by threads. If rotation hook is stuck by threads, manually rotate the bobbin horizontally, there will be no sticking if bobbin is flexible, or otherwise the rotation hook may be stuck. Please remove threads and apply oil prior to operation.
2. Needle bar is stuck. If the needle bar is adhered to rubber materials due to poor oiling for a long time, please apply oil to needle bar after cleaning and ensure smooth operation for needle bar.
3. Rusty presser foot drive shaft is stuck due to lack of lubrication, please replace with a new one and perform regular lubrication.

机器的常见问题的调试方法

Adjustment methods for common machine problems

一、如何调节针位和旋梭的正确位置。

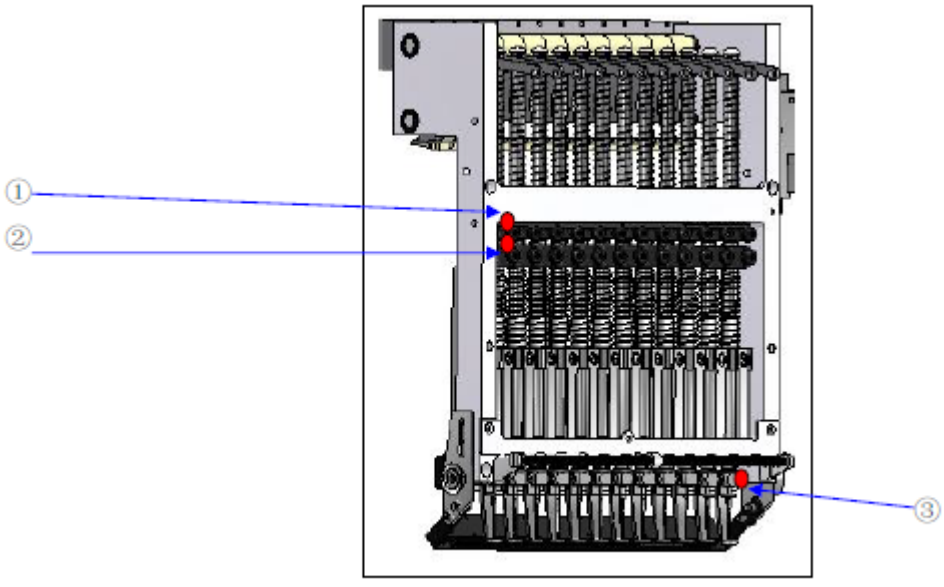
I. How to properly adjust the position of needle and rotation hook

针位是指针运行时的正确位置，旋梭的正确位置是指机器运行时机针与旋梭配合勾线的最佳位置，正确的调节针位和旋梭位置可以避免断线、断针、剪不断线确保机器正常的工作。

Needle position refers to the correct position of needle during operation; the correct position of rotation hook means the ideal position during machine operation for hooking by needle and rotation hook. Correct position of needle and rotation hook can prevent thread break, needle break and trimming failure, ensuring normal machine operation.

1.针位的调节

1. Adjustment of needle position

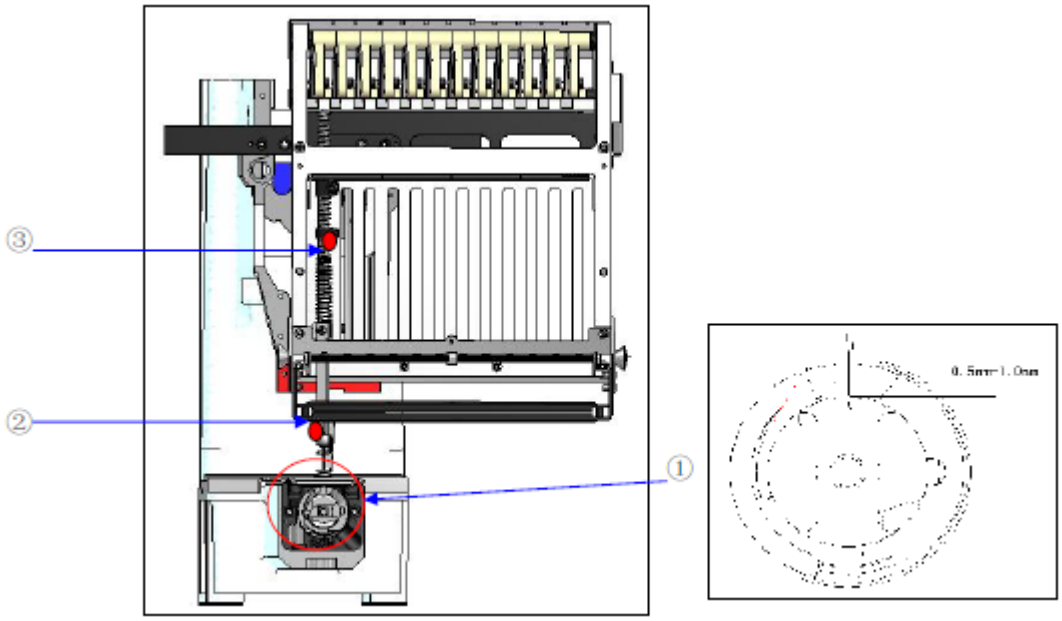


①——上死点夹头　②——针针连接销　③——针夹

1. Upper dead point clamp; 2. Needle-to-needle connecting pin　3. Needle clamp

调节前请先确认旋梭已经正确安装完成，然后转动主轴手柄到 195 度并确保针针连接销已经被驱动块扣上一起做上下运动，让针的上下位置达到下图所示位置后，再打紧针针连接销的定位螺丝。打紧针针连接销螺丝前请注意针夹上面的螺丝应当向右前斜 30 度后再打紧螺丝，以免针夹螺丝面对正前方时螺丝头与线发生摩擦，导致断线、毛线等。

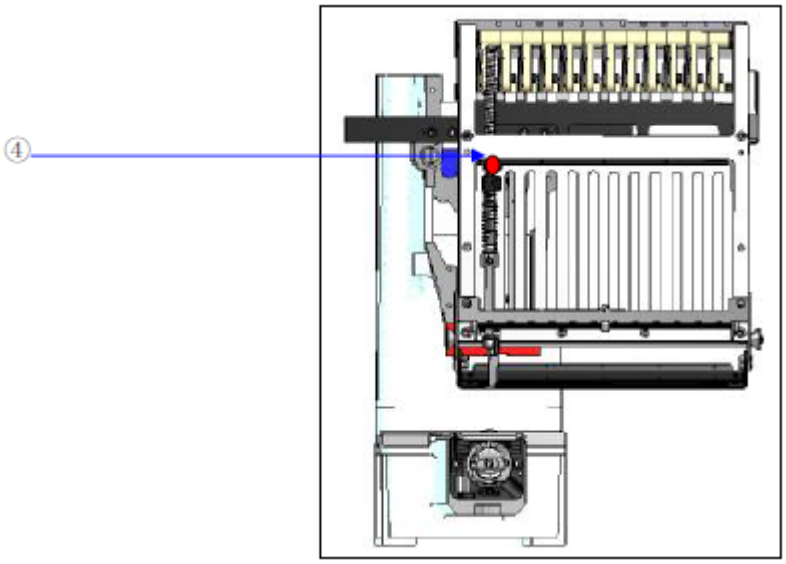
Prior to adjustment, be sure the rotation hook is correctly installed, rotate spindle handle to 195 degrees and ensure the needle-to-needle connecting pin is picked by the drive block to make vertical movement. Allow the needle reach to the position shown below and tighten the set screw to the needle-to-needle connecting pin. Prior to tightening screws, be sure the screw on the needle clamp inclined 30 degrees toward right so as to prevent the needle clamp screw from rubbing threads, causing thread break and burrs.



①. When the machine is positioned at 195 degrees, regulate the needle until the needle point ①shown in Figure 0.5mm-1.0mm longer than the inner circle of rotation hook.
②. Allow the needle clamp screw head inclined 30 degrees toward right and maintain the position of needle ① in the Figure.
③ After confirming both point ①and ② are adjusted, tighten the set screws to the needle-to-needle connecting pin.

打紧针针连接销螺丝后把机器转到 360 度（即 0 度）

After tightening the screws to needle-to-needle connecting pin, rotate the machine to 360 degrees (namely 0 degree).



④转到 0 度后将上死点向上顶直到与针杆架挨在一起为止并打紧固定螺丝 ,如果没有调到位机器运转过程中可能会导致工作时说明针不下来。

④. Push the upper dead point upward till against the needle case, tighten set screws. If it is not properly adjusted, the machine would not stitch during operation.

2.旋梭的调节方法

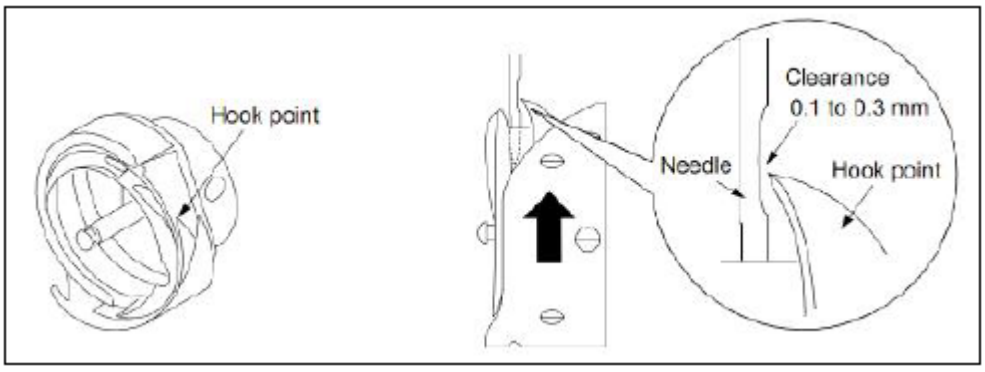
2. Rotation hook adjustment methods

在调节或更换旋梭前请把旋梭的固定螺丝放松并将旋梭放到下轴上。

把机器转到 195 度，按下图所示准备调节旋梭的位置

Prior to adjusting or replacing rotation hook, loosen the set screws and lay the hook on the lower shaft.

Allow the machine at 195 degrees, and adjust the position of rotation hook as shown below:



调节好旋梭的位置后请先把旋梭上其中的一个螺丝先固定 ,然后再检查一次针与旋梭的前后位置是否正常，以免在打紧螺丝时导致旋梭走位。

确定无误后再打紧旋梭的三个固定螺丝。

After adjustment, in order to prevent rotation hook dislocation while tightening screws, it is required to tighten one screw to the hook first, and then inspect the relative position of needle and hook.
After confirmation, tighten the three set screws to rotation hook.

二、压脚的调节方法：

II. Presser foot adjustment methods:

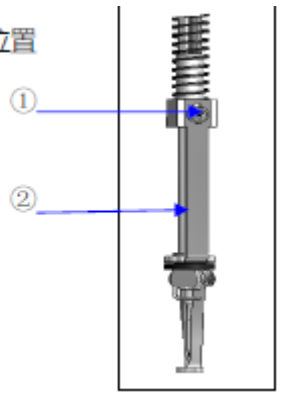
压脚的高度不是固定的通常在使用中我们都要对压脚进行调节，不同的材料对压脚的高度要求也不一样，具体调节方法如下：

把机器转到 172 度，然后按下压脚看压脚与针板之间的距离。

Presser foot height is not constant, and generally we need to adjust the presser foot. Different materials may have different requirement for presser foot height, specific adjustment methods are described as below:
Allow the machine at 172 degrees, press down the presser foot to inspect the clearance between presser foot and needle plate.

根据右图所示，松开调节螺丝后可以调节压脚的上下高度位置

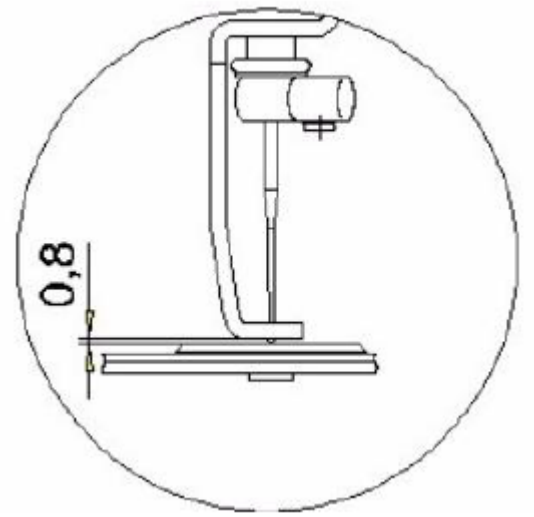
确认高度后请务必锁紧固定螺丝。



①——调节螺丝　　②——压脚

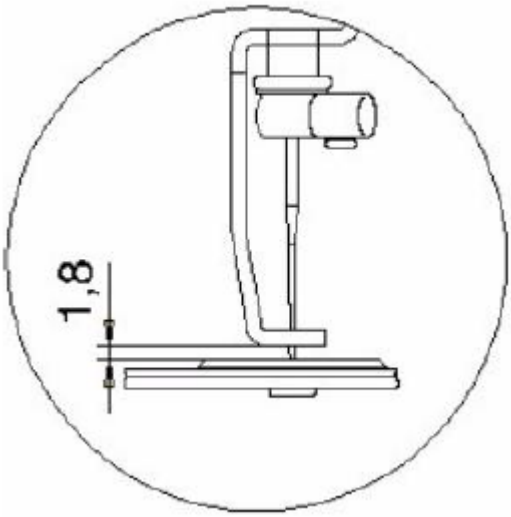
As shown in the right Figure, loosen the adjusting screws and regulate the vertical height of presser foot. After adjustment, be sure the set screws are secured.
① Adjusting screw　　② Presser foot

一般料的情况下压脚的高度为 0.8mm



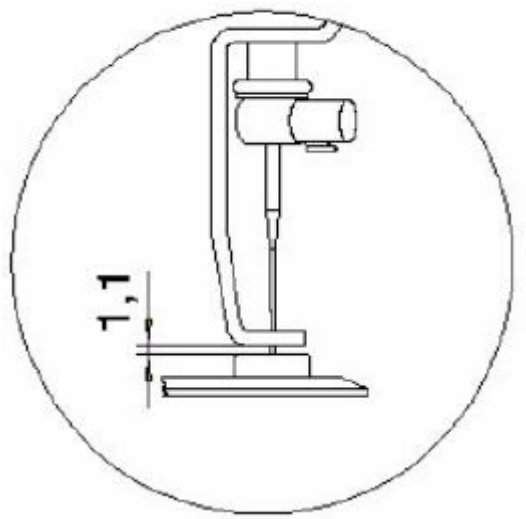
For normal materials, the presser foot height should be 0.8mm.

刺绣厚料的情况下压脚的高度为 1.8mm



For thick embroidery materials, the presser foot height should be 1.8mm.

再刺绣帽子情况下压脚的高度为 1.1mm



For cap embroidery, the presser foot height should be 1.1mm.

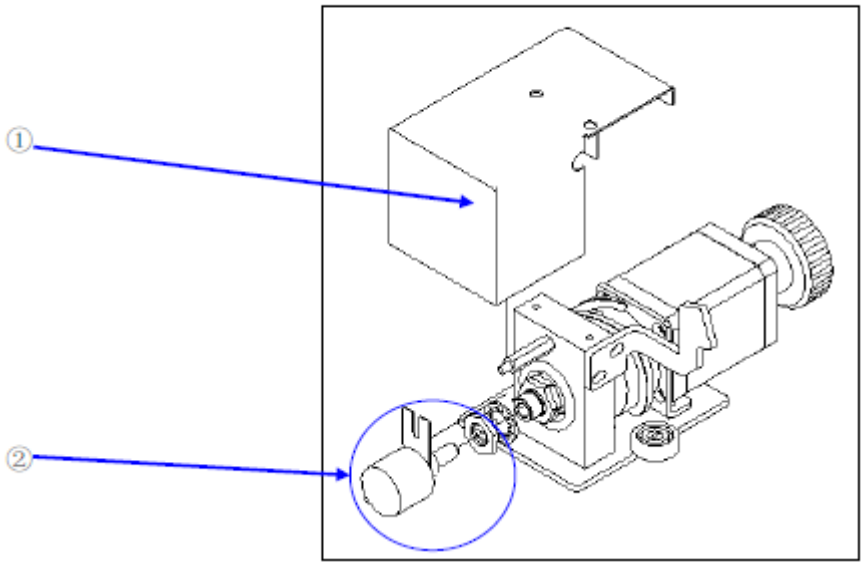
三、电位器的更换与调节

III. Replacement and adjustment of potentiometer

电位器损坏一般表现为显示屏上没有针位显示或都经常显示针位不到位。电位器安装的具体方法为：

Potentiometer damage is normally represented by no needle position display or improper needle position. Potentiometer should be installed as follows:

1.拆下换色电机的电机罩壳



1. Remove the color change motor housing.

①——换色电机罩壳　　②——电位器

① Color change motor housing　② Potentiometer

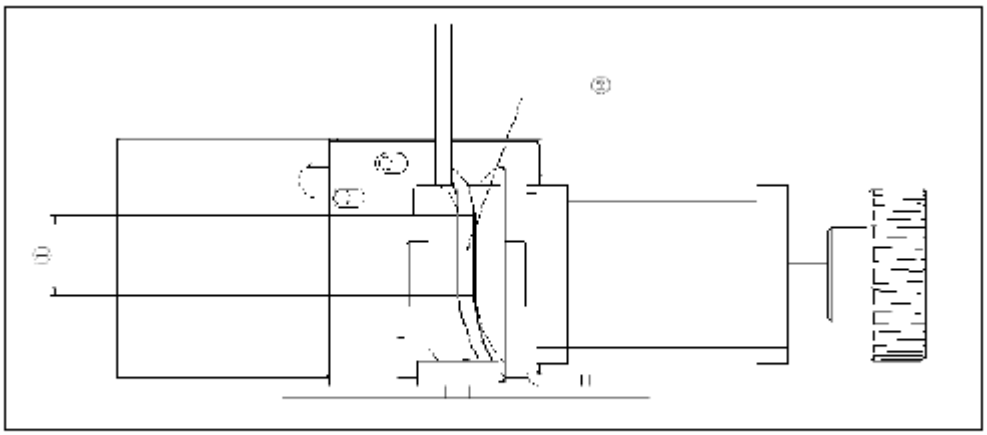
2.松开电位器的固定螺丝后，拔出电位器。

3.把新的电位器接好后转动电位器到第五枚信号时等待安装

4.手动转动换色手柄，将针移到第五枚并对准针孔的中心。

注意 :转动换色手柄时一定要让换色板上的两个轴承卡在凸轮上并且要卡在换色凸轮平直区的中间。

2. Loosen the set screws to potentiometer and pull out the potentiometer.
3. Connect the new potentiometer, and rotate it until the fifth signal prior to installation.
4. Manually rotate the color change handle and move the needle to the fifth signal directing at the needle hole center.
Note: while rotating color change handle, the two bearings on the color change plate should be stuck on the central flat area of cam.



①——换色凸轮平直区　　②——换色凸轮

① Flat area of color change cam　② Color change cam

5.把新的电位器安装回去，安装完马后一定要确认换色滚珠还卡在凸轮的平直区的中间，同时须确认操作头上的针位数字显示为 5，否则请重新安装。

6.以上部分安装完成后，打紧电位器的固定螺丝并把换色电机罩壳装回到换色装置上。

5. Install the new potentiometer. Prior to installation, it is required to ensure that the color change ball is stuck on the central flat area of cam and the number of needle position on the operation head is displayed as 5.
6. After completion of above installation, tighten the set screws to potentiometer and

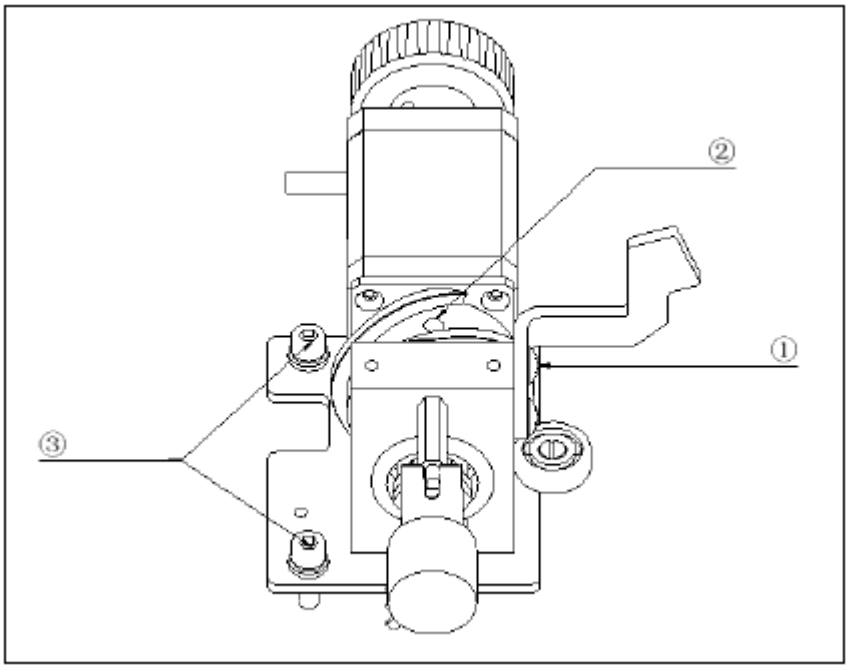
install the color change motor housing on the color change device.

四、换色装置的安装、调节方法：

IV. Installation and adjustment methods for color change device:

下图为换色装置各个部位的调节示意图：

The adjustment sketch for each part of color change device is presented as below:



①断检光偶支架固定螺丝——松开螺丝后可以左右调节断检光偶支架，当断检光偶的光偶中心线没有对准折光轮中心线时可以通过这个螺丝来调节。

②换色凸轮固定螺丝——固定换色凸轮的位置。当换色轴承卡在换色凸轮平直区的中间时，此时针不能对准针孔的中心时（针左右偏差时），此时可以松开凸轮的固定螺丝（共两颗螺丝对称安装）左右移动换色凸轮让针对准针孔的正中心时再打紧凸轮的固定螺丝。

③换色装置固定螺丝——这个螺丝是把换色装置与机头固定在一起的螺丝。当凸轮与换色轴承之间的间隙过大或过小时可以松开这两个螺丝，前后调节换色装置的前后位置，等换色装置与换色轴承之的位置配位最佳时，再固定这两个螺丝。

注意：打紧螺丝后一定要检查针是否在针孔的中心，以免调节失误带来的不便。

①. Set screw to the breakage detection optical coupler support — After loosening screws, regulate the breakage detection optical coupler support, the screws can be used for adjustment when the central line of optical coupler fails to align themselves with that of

refraction wheel.

②. Set screw to color change cam — secure the position of color change cam. When the color change bearing is stuck on the central flat area of color change cam and the needle fails to align with the hole center (horizontal deviation), loosen the cam set screws (two symmetrically installed screws), move the color change cam horizontally and allow the needle align with needle hole center, finally tighten the set screws.

③. Set screws to color change device — secure color change device and machine head together. When the clearance between cam and color change bearing is too large or small, loosen the two screws to regulate the position of color change device horizontally, and tighten screws after the optimal position of color change device and bearing is confirmed.

Note: To prevent improper adjustment, it is required to inspect if the needle is centered in the needle hole after tightening screws.

五，剪刀的调节方法

V. Shear adjustment methods

机器长时间工作后机器的剪线功能可能出现故障，一盘故障分为两种：

①动刀与定刀配合不好，需要重新调节。

②动刀或定刀损坏，需要更换。

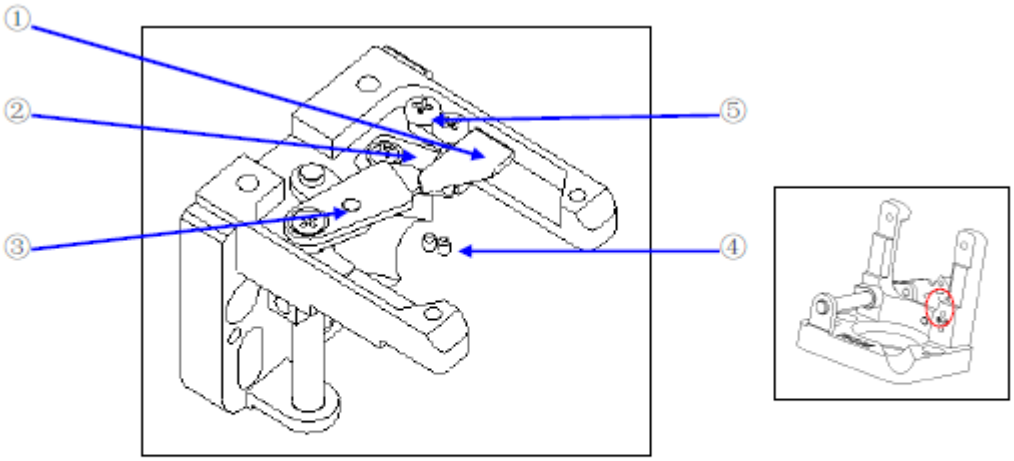
After long time of machine operation, trimming function may have two common faults as described below:

①. Poor fit between moving and fixed knife and readjustment is required.

②. Moving or fixed knife is damaged and replacement is required.

以下是剪刀正常情况下闭合时的示意图：

sketch of normal shear closing:



①——定刀　　②——弹片

③——动刀　　④——定刀调节螺丝（下）

⑤——定刀调节螺丝（上）

①. Fixed knife　　②. Shrapnel

③. Moving knife　　④.　Set screw to fixed knife (lower)

⑤ Set screw to fixed knife (upper)

定刀正常工作时是固定不动的，当动刀把线勾回来时凭借定刀下平面的锋利与动刀的上平面的过赢配合把线切断，从而实现剪线。更换或调节剪刀，最重要的就是定刀的调节，动刀我们只要确保它能顺畅地绕轴转动且动刀不能上下串动就可以了。

弹片的主要功能是剪线完成后把底线压住，避免剪线过后底线弹回去造成底线过短机器再次下针时底线带不上来。正常情况下当动刀闭合时弹片的上平面与动刀的下平面能靠在一起就可以了，但是不能太向上，因为动刀剪线时可能会碰到弹片，造成弹片损坏。

Under normal working condition, fixed knife is fixed. Threads hooked back by the moving knife are cut by the interference fit between the sharp lower plane of fixed knife and the upper plane of moving knife. Regulating the fixed knife is quite necessary for replacement or regulation of shear. For the moving knife, it should be kept smoothly rotating around the shaft and free of any abrupt vertical vibration.

Shrapnel is mainly used to press the lower threads after trimming to prevent failure to hook threads at the next stitch due to its short length. Normally, when the moving knife is closing, the shrapnel upper plane and the lower plane of moving knife is pressed against with each other. The position of shrapnel should not be positioned too high since the moving knife during trimming may be in contact with the shrapnel, causing shrapnel damage.

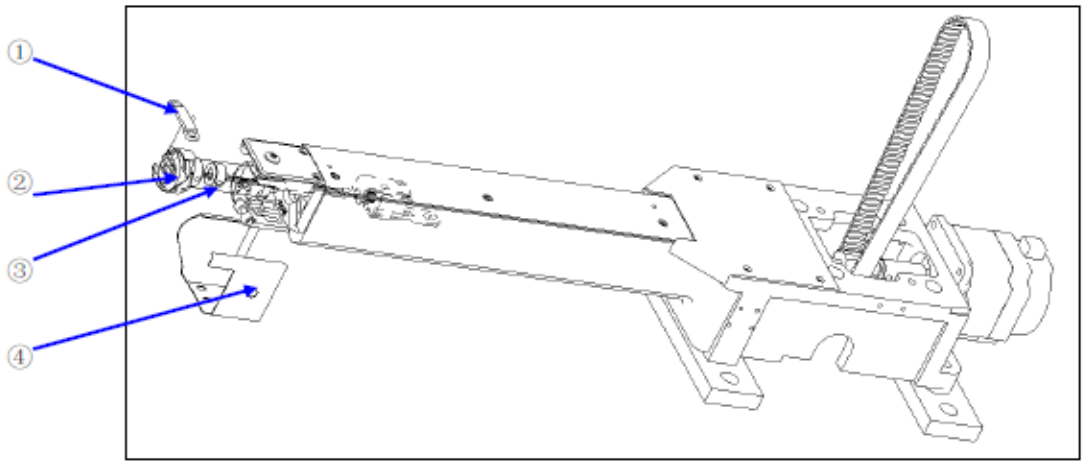
定刀的调节要点：

通过定刀调节螺丝（下）④与定刀调节螺丝（上）⑤调节定刀让定刀的刃口与动刀的上平面形成0.01mm - 0.03mm的过赢配合，如果配合大于0.03mm,那么在执行剪线时剪电机会带不动，所以调节完成后一定要确保定刀与动刀的配合不能太紧。在调节时如果动刀与定刀配合时平面不平行，可能线还是不能被剪断。常用的检测方法：定刀调节完后，用一支带油性的大头笔在动刀的上平面上均匀的涂上一层，然后手动让动刀切合一次，如果两边都把黑色部刮掉了，说明你的调节是正确，如果一边或两边都没有被刮干净那么再需要重新调节。

Notes for fixed knife adjustment:
Regulate the adjusting screw (lower) ④ and (upper) ⑤ to form the interference fit of 0.01mm－0.03mm between the cutting edge of fixed knife and the upper plane of moving knife. If the fit is more than 0.03mm, the trim motor will not work during trimming, so after regulation, it is required to ensure a proper fit between the fixed and moving knife. For the fit between the moving and fixed knife, if the plane is not in parallel, the threads may not be snipped off. Common detection methods: after regulating fixed knife, rub on the upper plane of moving knife evenly with grease pencil, and manually make the moving knife closed, if the black stain on both sides are cleaned, the regulation should be deemed correct; while readjustment will be required if one or both sides are not cleaned.

六、更换主轴电机的方法。

Replacement method for spindle motor



①——旋梭定位勾　　②——旋梭

③——梭箱挡圈　　④——针板座罩壳

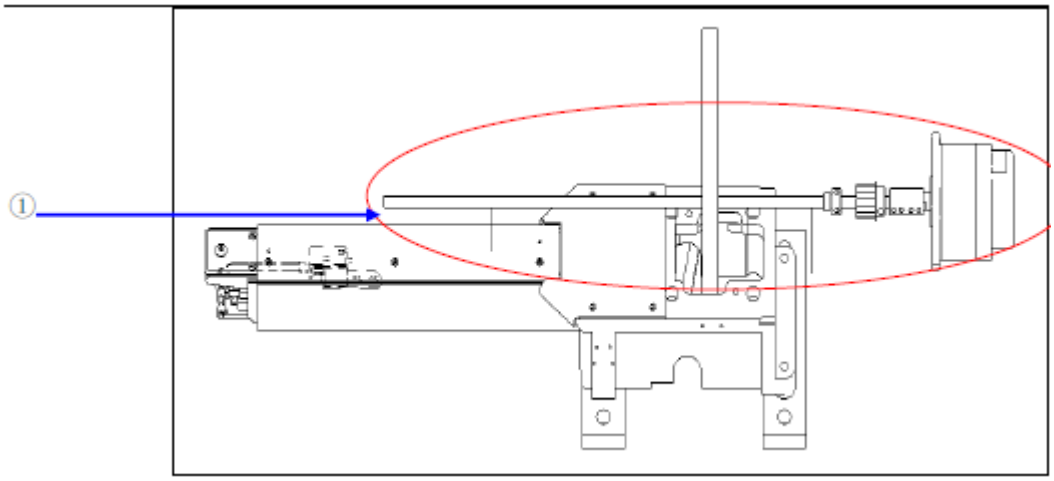
1. Rotation positioning hook　　2. Rotation hook

3. Rotation hook baffle 4. Needle plate base housing

If need to replace spindle motor when machine is at 100 degrees, it is required to remove the needle plate base housing; while it is not at 100 degrees, manually rotate to 100 degrees, remove the positioning hook and rotation hook, and then remove the baffle.
After removal of above parts, remove the spindle motor mounting screw, pull out the motor. If it is not easy to pull out, rotate the spindle handle while pulling outside. If any obstruction is found, no forceful pulling is allowed since it may cause belt damage. In addition, no knock on the shuttle box with hard objects is allowed, which will damage the shuttle box shaft.

下图为拆下后的示意图：

The spindle motor after disassembly is shown in the following sketch:

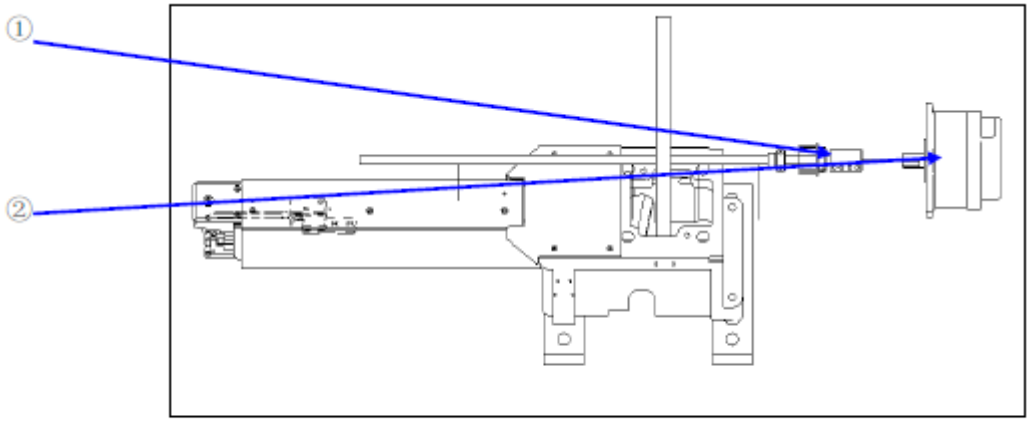


①——拆出后的主轴电机

①. Spindle motor after disassembly

松掉主轴电机端主轴电说机接套端的固定螺丝，然后更换上新的主轴电机如下图所示：

Loosen the set screws to the spindle collar at the side of spindle motor, and then replace with a new spindle motor as shown below:



①——主轴电机轴接套　　②——主轴电机

1. Spindle motor bearing collar　　2. Spindle motor

注意：安装主轴电机时禁止敲打主轴电机，以免损坏主轴电机。

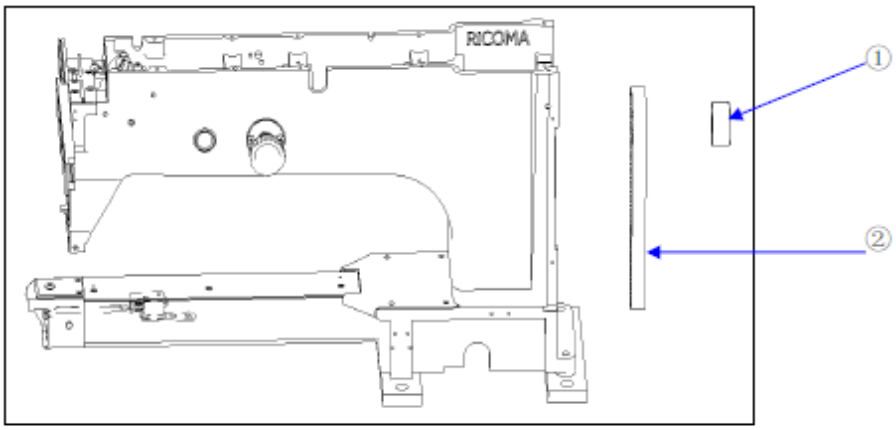
Note: to prevent any damage to the spindle motor, it is forbidden to knock on the spindle motor during installation.

更换主轴皮带的方法：

Spindle belt replacement methods:

拆下主轴电机后，有一个简单的方法可以直接更换下主轴皮带如图：

After removal of spindle motor, a simple way to directly replace the spindle belt is presented as below:



①——上轴后轴套　　②——主轴皮带

1. Upper shaft rear bearing collar　　2. Spindle belt

拆除主法：拆下主轴后轴套后，将旧的皮带拆出来，然后将新的皮带从上轴后轴套后的孔中放进去，这样就不用把整个上轴拆下来更换皮带了。

把新的皮带放进去后再把上轴后轴套装回原来的位置，安装时注意上轴后轴套的油孔一定要地准机头的加油孔，否则将无法加油。

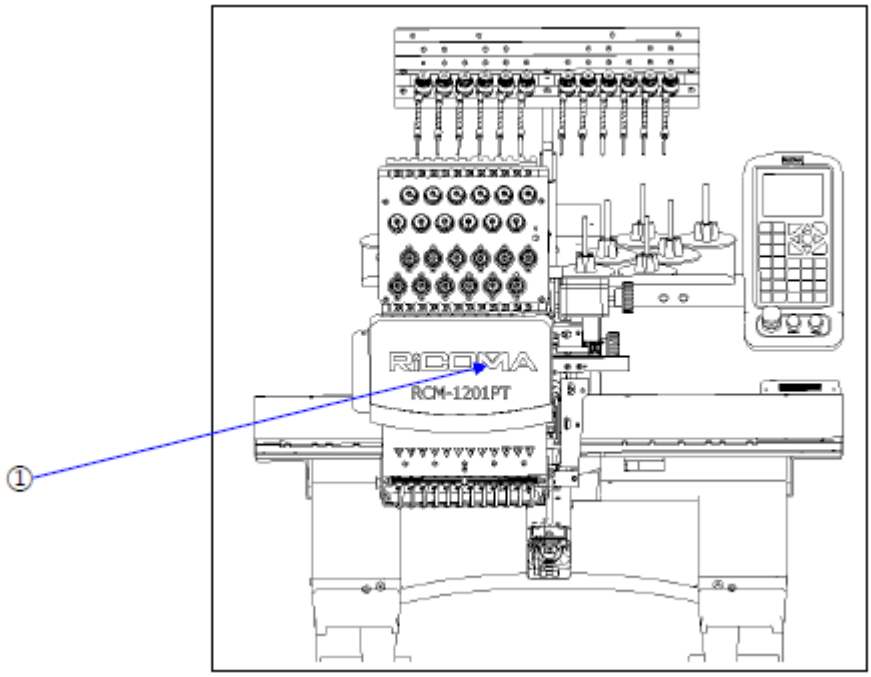
更换完主轴电机或皮带后请按以下顺序重新安装相关零部件：

将主轴电机安装到主轴电说机轴接套上并打紧螺丝——把主轴电机和轴一起装回梭箱（安装时请注意轴要串过皮带）——把主轴电机和轴一起装回原位（在装回原位时注意一要让皮带装到皮带轮上，可以通过转动主轴把皮带装到皮带轮上），然后打紧主轴电机的固定螺丝——装上梭箱挡圈并打紧螺丝——安装旋梭——安装梭定位勾并打紧固定螺丝——调整旋梭位置并固定旋梭——安装针板座罩壳。

Method: pull out the old belt after removal of spindle rear bearing collar, put the new belt in from the hole of upper shaft rear bearing collar. The belt is replaced without having to dismantle the whole of upper shaft.
After putting in the new belt, install the upper shaft rear bearing collar to the original position. Be sure the oil hole aligns with that of machine head, or otherwise oiling is impossible.
After replacing spindle motor or belt, please reinstall parts in the following sequence:
Install the spindle motor to the shaft bearing collar, tighten screws —— have spindle motor and spindle installed inside the shuttle box (be sure the spindle crosses over the belt) —— install spindle motor and shaft to the original position (be sure the belt is mounted on the belt pulley, which can be performed by rotating the spindle), tighten the set screws to the spindle motor —— install shuttle box baffle and tighten screws —— install rotation hook —— install ration positioning hook and tighten screws —— regulate the position of rotation hook and tighten it —— install needle plate base housing.

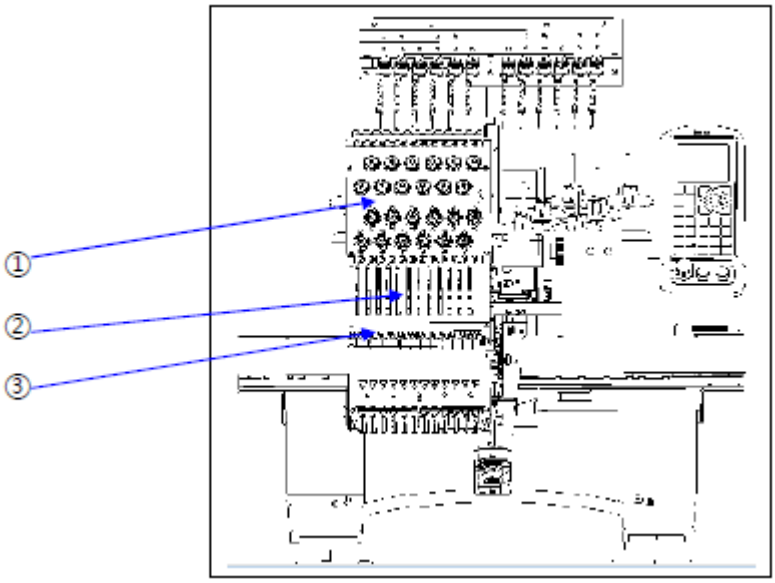
七、更换针杆驱动器的方法：

VII. Replacement method for needle bar drive
Please replace the damaged needle bar drive as per following procedures:
1. Prior to replacement, allow the machine at 100 degrees, remove the front housing of needle bar frame as shown in the following figure:



①--------针杆架前面罩壳

2. Front housing of needle bar frame. Be sure the thread breakage detection optical coupler and alarm light wire is removed prior to the thread tension base.



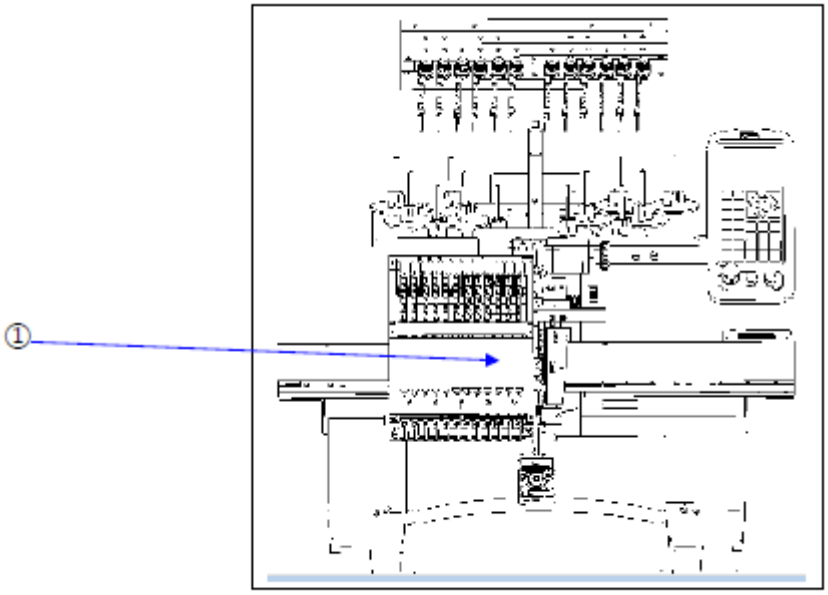
①——过线器　　②——针杆架上面板

③——中过线

①. Thread tension base　②. Upper plate of needle bar frame　③. Middle thread course

3.然后再把针杆架拆下来。拆针杆架前请先把中过线的针杆架上面板拆下来。

3. Take off the needle bar frame. Prior to removal of needle bar frame, it is required to remove the upper plate of middle thread course needle bar frame.

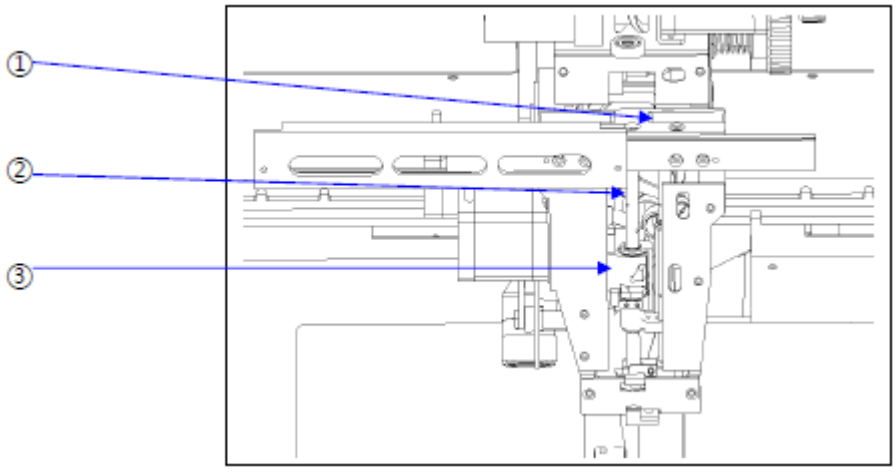


①——针杆架

①. Needle bar frame

4.拆下挑线杆导向板

4. Remove the take-up bar guide plate



①——挑线杆导向板　　②——机头驱动轴

③——针杆驱动块

①. Take-up bar guide plate　　②. Machine head drive shaft

③ Needle bar drive block

5.拆下机头驱动轴和针杆驱块。

5. Remove the machine head drive shaft and needle bar drive block

更换完针杆驱动块后请按以下顺序把拆下的零部件重新安装机器上：

After replacement of needle bar block, please reinstall the removed parts to the machine:

将更换后的针杆驱动器插入机头的大连杆上——然后把机头驱动轴装回到原位(注意机头驱动轴的下方有一个台阶，台阶平面一定要对正机头驱动轴的固定螺丝处)——打紧机头驱动轴的固定螺丝——把挑线杆导向板装回原位——安装针杆架(安装针杆架时应当注意首先确定机器在停在 100 度，安装时请把针位调到第一枚或最后一枚，安装针杆架时请对准第一枚或最后一枚)——将过线器装回到针架上 (注意断检偶的安装不要装反否则机器将会报警无法正常工作) ——最后装回所有附件。

Insert the replaced needle bar drive in the large connecting rod of machine head —— install the machine head drive shaft to the original position (be sure the plane of a step below the drive shaft is directed at the set screws to the machine head drive shaft) —— tighten the set screws to the machine head drive shaft —— install the take-up rod to the original position —— install needle bar frame (be sure the machine is at 100 degrees. The needle should be regulated at the first or last needle position. Align with the first or last needle position while installing needle bar frame) —— install the thread tension base on the needle frame (be sure the breakage detection optical coupler is not inversely installed, or otherwise the machine's alarm function will not work) —— install all accessories.

八、更换 X、Y 向皮带的方法

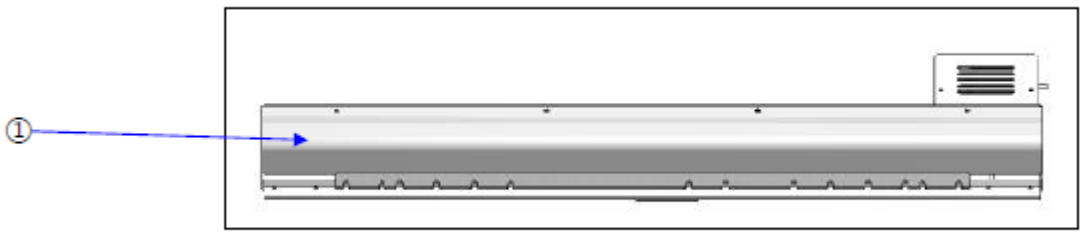
VIII. Replacement method for X, Y-direction belt

X 向皮带的更换方法

1.首先将 X 向驱动上的罩壳拆下来

Replacement method for X-direction belt:

1. Remove the X-direction drive housing.

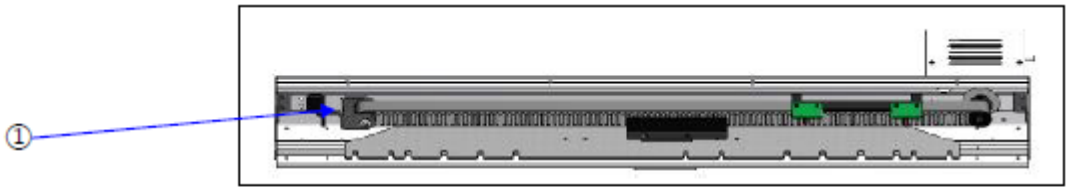


①——X 向驱动罩壳

①. X-direction drive housing

2.松开同步带轮的张力调节螺丝

2. Loosen the tension adjusting screw to the synchronous pulley wheel

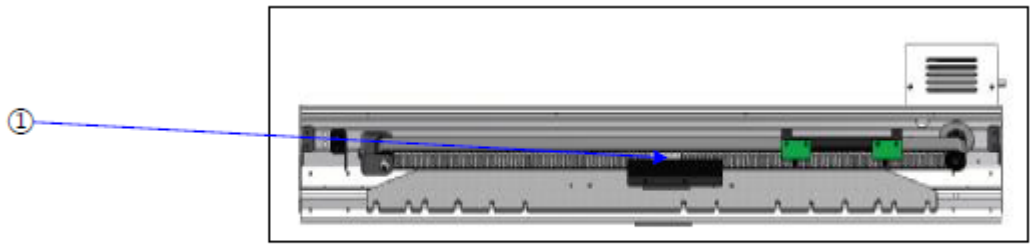


①——同步带轮张力调节螺丝

① Tension adjusting screw to the synchronous pulley wheel

3.然后拆下 X 向的皮带压板

3. Remove X-direction belt press plate



①——X 向皮带压板

①. X-direction belt press plate

4.拆下旧皮带后将新的皮带更换到 X 向驱动装置上。

4. After removal of old belt, install the new one to X-direction drive device.

5.请按以下步骤安装 X 向驱动皮带：

将新的皮带穿过两个皮带轮并将接头对准到皮带压板处准备安装皮带压板——将对接好的皮带用皮带压板压住并打紧固定螺丝（注意皮带对接时请不要让皮带歪斜）——安装同步带轮张力调节螺丝并调节同步带轮的张力（皮带张为不宜过大，过大会使同步带轮中的轴承损坏）——张力调节好后把调节螺丝的螺母打紧以免工作时的振动使调节螺丝松动——最后盖上 X 向驱动罩壳。

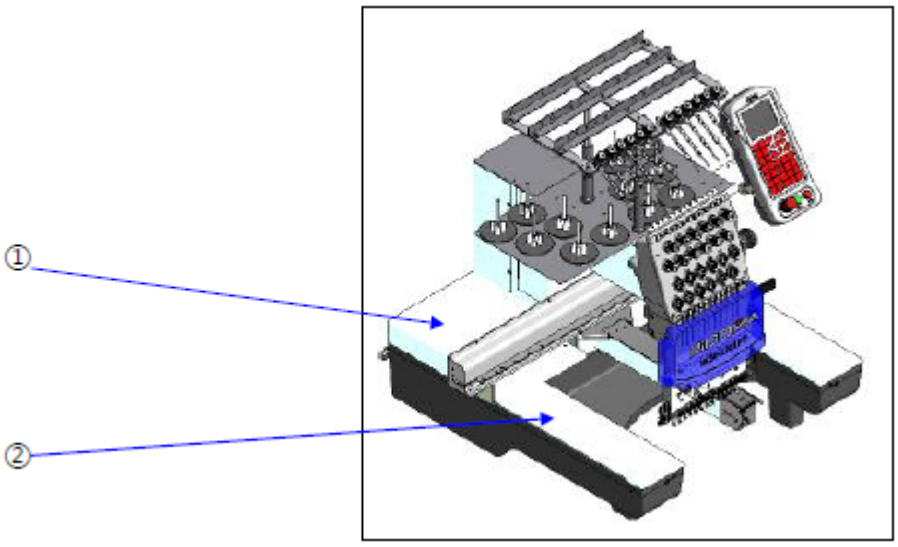
5. Install X-direction drive belt as per following procedures:
Lead the new belt through two belt pulleys and allow the connector align with belt press plate for installation —— press the belt with belt press plate and tighten set screws (Be sure the belt is kept straight when aligning with the belt) —— install synchronous pulley tension regulating screws and regulate the pulley tension (which should be properly

controlled, since too large tension will cause pulley bearing damage) —— after tension regulation, tighten the regulating screws to prevent loosening due to operation vibration —— put on the X-direction drive housing.

Y 向皮带的更换方法:

1.先拆下机器的前后防护罩壳

Replacement method for Y-direction belt:
1. Remove the X-direction drive housing.

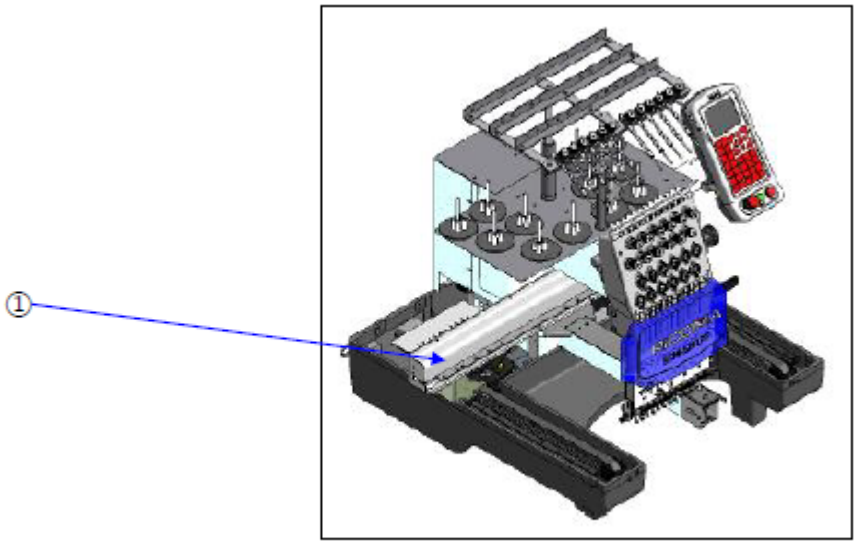


①——机器后罩壳　　②——机器前罩壳

① Machine rear housing　　② Machine front housing

2.拆下 X 向驱动装置

2. Remove X-direction drive device

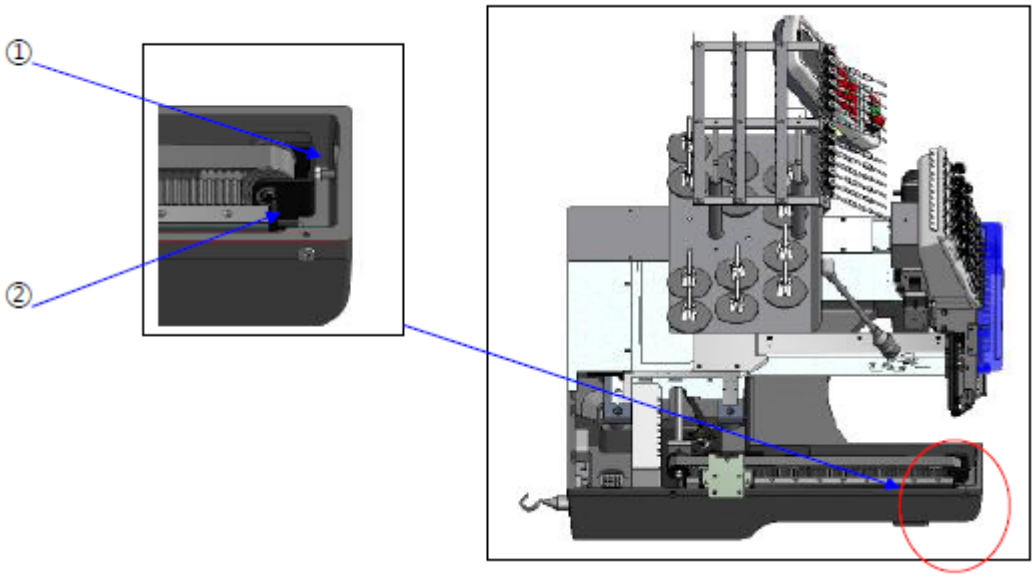


①——X 向驱动装置

①. X-direction drive device

3.拆下皮带张紧轮的调节螺丝和固定螺丝

3. Remove the regulating screw and set screw to the belt tension pulley

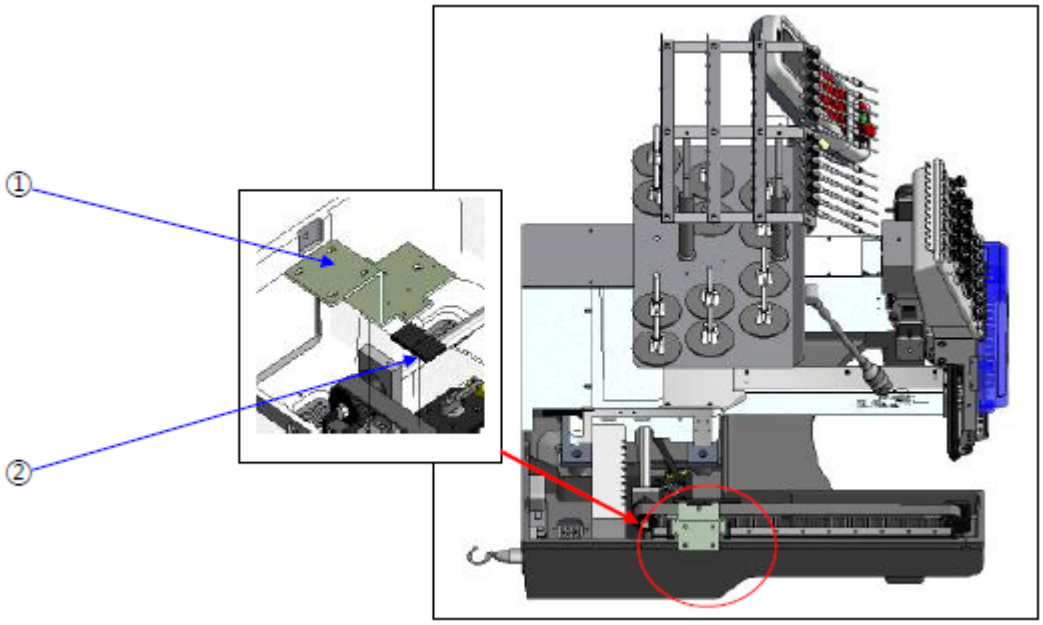


①——张力调节螺丝　　②——张紧轮固定螺丝

①. Tension regulating screw　　②. Tension pulley set screw

4.拆下 X、Y 连接板和皮带压板

4. Remove X and Y connecting board and belt press plate



①——X、Y 向连接板　　②——皮带压板

①. X and Y-direction connecting board　　②. Belt press plate

5.拆下无用的皮带并将新的皮带安装到机器上。

5. Remove the useless belt and install new belt to the machine.

请按以下步骤安装皮带：

将新的皮带穿过被动轮——将皮带对接好并打紧皮带压板的螺丝（对接皮带时一定要注意平行对接皮带，不能歪斜）——将皮带压板安装到导轨上并固定螺丝——将皮带放到皮带轮上——安装张紧轮的固定螺丝和调节螺丝并调节皮带的张力（调节张力要注意皮带张力不宜过紧，且两边的皮带张力要一样，调节完成后前后推动 X、Y 向连接板时皮带在皮带轮的中间运行为最佳）——安装 X 向驱动（安装时注意 X 向驱动的固定螺丝分为两种，前面两个用 4X8 的螺丝，后面两个用 4X6 的螺丝）——最后安装前后防护罩壳。

Install belt as per the following procedures:
Lead the new belt through the driven wheel —— tighten the screws to the belt press plate (Be sure the belt is jointed in parallel, free of inclination) —— install belt press plate to the guide grail and tighten screws —— put belt on the belt pulley —— install the tension pulley set screws and regulating screws so as to regulate the pulley tension (which should be properly controlled, and the tension of belt on both sides should be the same. After regulation, it is ideal for belt to operate between belt pulleys when pushing X and Y-direction connection plate) —— install X-direction drive (Note: there are two

types of set screws for X-direction drive, two front 4x8 screws and two rear 4x6 screws)——install the front and rear protective housing.

绣花机使用的常见知识

Common knowledge about embroidery machine

一，使用常识

1.线的分类

I. General usage knowledge

1. Classification of thread

绣花线是影响花样色彩的一个重要元素,变花多端的颜色配搭，可以令花样生色不少。相反,错误的选择,则会令刺绣效果不够理想。

Embroidery thread is an important factor for pattern color. Varied color matching will be the highlight of pattern, while improper selection will make embroidery far from satisfaction.

涤纶丝

Polyester filament

涤沦丝的特性是可以抵受化学物质及经常洗涤,减少衣物退色及脱色现象,所以,酒店制服、石磨蓝牛仔衣物、运动服或者儿童服装都会用涤纶丝制造。

相对而言,涤纶丝较人造丝坚韧。当进行刺绣时,机器在高速运转,韧度高的涤纶线也可以承受较大的拉力;而且其防火性极高,即使衣物接近火焰,也不易触火。

涤纶丝的线质不比人造丝稳定，而是较富弹性。你可以剪一断人造丝线做测试，用力拉，然后放松，你发现绣花线不会怎样收缩；相反，经拉扯后的涤纶丝，一旦放松，便会回复原来长度，因而有机会导致花皱折，故在线张力调较方面，需要更准确。

Polyester filament is resistant to chemicals and frequent washing, rarely suffering cloth fading and discoloration, so the hotel uniform, stone-washed indigo jeans, gym suit or children's clothing are most made of polyester filament.

Relatively speaking, polyester filament has better toughness and tensile strength than rayon. For high-speed embroidering, the polyester filament of high tensile strength can sustain higher pulling force; in addition, its ideal fire-proof performance makes the clothing close to fire not easy to be aflame.

Compared with rayon, polyester filament is less stable in quality but more elastic. We can make a test by cutting a segment of rayon. Pull it with force and then relax, the embroidery thread will not retract in some extent; in contrast, the pulled polyester filament, once relax, will recover to its original length, more likely making pattern ripples, so more accurate thread tension regulation will be required.

人造丝

Rayon

人造丝跟涤纶线的性质大同小异，前者的优点是颜色选择更多。另外，如上述提及，人造丝的稳定性亦较涤纶丝高，即使经机器框架移动的拉扯，也不会明显收缩，但就容易触火，亦不宜经常洗刷。

Rayon is much the same the polyester filament in property, while the former provides more color selections. In addition, as mentioned above, rayon is more stable than the polyester filament, which will not show any evident retraction even pulled by the moving frames. On the other side, rayon takes fire easily and not appropriate for frequent washing.

金属丝

Tinsel

金属丝的特点，只是在线的外层盖一层金属薄膜，内层实是人造丝或者涤纶丝组成。由于线的表层光泽，设计者可制作闪闪生辉的绣花效果；但，与此同时，亦为绣花带来负面的影响。因在刺绣时，绣针、绣线以及布料之间经常磨擦，产生热力，这时，绣花线的幼毛便发挥作用，将热力经绣针带走，而金属丝的表层则不带幼毛，绣针的热力依然存在，以致金属薄膜被热力溶解，甚至造成断线。

Tinsel is the thread covered by a layer of metallic film, inner layer of which is composed of rayon or polyester filament. With the thread with surface brightness, designer can work out the shiny embroidery while it will also cause negative impact on embroidery since the frequency friction among the needle, thread and cloth may produce heat, and the Yarn thinning of embroidery thread will help conduct heat through the needle, while the tinsel surface has no Yarn thinning. The heat remained on the needle will melt the metallic film, even causing thread breakage.

羊毛线

Wool thread

羊毛线比一般绣花线为粗大，是与别不同的一种绣线。最常见应用于毛巾绣、绳绣以及锁链针步，配搭在针织布上尤显美观，特别是少女针织服装，柔软的绣花效果，更有手工艺品之美感。因其厚身的质地，需选用较粗的针，100 号或 110 号的针为合适，但要考虑到是否能配合布料。此外，线张力亦要相对调松，供绣花线足够的空间走动。

Wool thread, which is thicker than the common embroidery thread, differs from other threads. It is commonly used for towel embroidery, rope embroidery and chain stitching. It can be artistically decorated along with knitted fabric, especially the girl's knitted clothing, presenting the softness and beauty of embroidery and handicraft. Due to its thickness, the thick needle, #100 or 110 would be preferable, depending on the cloth. In addition, the thread tension should be relaxed to provide sufficient space for embroidery thread movement.

2.衬纸

2. Gasket paper

底衬：
底衬是一层铺在布料下的料物，作用是稳定针迹及改善刺绣的顺滑程度，如皮革绣，纸衬就起了润滑的功效。

Bottom lining:
Bottom lining is applied beneath cloth to stabilize the needle track and improve the smoothness of embroidery, such as the leather embroidery, the gasket paper may serve as the lubricant.

面衬：
遇上绣特别的布料，如毛巾布、丝绒、毛毯或天鹅绒，因表面全是长毛，毛线之间容易挠线，加上一层面朴，以防绣花线被缠住。灯芯绒是另一类表面不平滑横的布料，骤眼看来，花样像是漏针，其实不然，只是布面的坑纹造成针迹下陷现象，故要加上面朴。

Surface lining:
For some special fabrics with long wool on surface, such as the towel cloth, velvet, woolen blanket or velure, as threads are easily intertwined, a layer of surface lining can be applied to prevent intertwining. Corduroy is another type of cloth with unsmooth surface, and at first glance the pattern is subject to missed stitch. Actually, it is just the pit pattern of cloth cover that makes the sinking needle tracking, so the surface lining is necessary.

剪朴：
剪掉性的朴通常用作底衬，刺绣完成后，可将剩下部份剪除。

Cut interlining

Cut interlining is normally used as the bottom lining. After embroidery, the remaining part can be removed.

撕朴：
是一种比剪朴较薄的纸朴，刺绣后，可随意撕掉多余部份。

Tear interlining:
It is an interlining thinner than cut interlining. After embroidery, the unnecessary part can be torn off.

水溶布：
水溶布最常用在毛巾布及绒布，作面衬使用，以防毛线。做法是刺绣完毕后，先用手撕除多出部份，再经水洗，将所有水溶布完全溶解。此外，一些高价的产品，都会用水溶布作底衬或面衬，以提高产品质量。

Water soluble cloth:
Water soluble cloth is commonly used as the surface lining for towel cloth and flannelette to prevent burred threads. The operation process is that, after embroidery, tear off the unnecessary part, wash with water and completely dissolve the water soluble cloth. In addition, water soluble clothes are used as the bottom lining or surface lining for some highly priced products to improve product quality.

3.热溶胶

用途大致和水溶布一样，只是热溶胶要用热力溶解，例如滚轴式的热压机或熨斗均可，绝不会影响花样或留下任何的衬料。

绣花辅料常识

3. Hot sol
Similar to the water soluble cloth in usage, the hot sol is solved by heat, such as by the roller type hot press or iron, with no impact on the pattern or any other lining left.
Common knowledge about embroidery accessory

4. 绣花针

或许你有同一样的经历，就是忽略了针的重要性。针须然是细微，但只要有小许的损坏，已足以破坏整个花样，而幼细的布料如丝质布或 organ 纱布，影响就更大。针有不同的粗幼度及表面处理方法，你可选择最合适的种类，以达到最佳的刺绣效果。

4. Embroidery needle
You maybe sometimes pay less attention to the needle, while the whole of pattern would be damaged due to a small inconspicuous damage to the little needle, even worse to the fine clothes like the silk cloth or organ gauze. Needles are of different find degree and with different surface treatment methods. You can select the proper type to attain the optimal embroidery effect.

针的型号 ：

我们平时总是听到绣花机针叫法有两种，有的说是 90 号针，有的说是 14 号针——其实 90 号机针与 14 号机针是同一个型号的针。其实主要是叫法不同，一般绣花机针（就是缝纫机针）按行业规定针号分为公制和号制（美制），不管是公制还是号制，它都是以机针的工作部直径大小为针的号数。以下是两种不同分类法的对照和具体参数：

Model of needle:

In daily lives, we usually know two terms to describe the embroidery needle: # 90 and # 14 —— virtually both of them refer to the needle of same model, just different in the name. Generally the embroidery needle (sewing machine needle) can be classified into the metric system and size system (American system) according to the industry standard needle size. Both of them are dependent on the diameter of working part of the machine needle. The contract and specific parameter for those two different classifications are provided as below:

公制 Metric System	号制 (美制) Size System (American System)	工作部直径（毫米） Diameter of work part (mm)
60#	8#	0.60
65#	9#	0.65
70#	10#	0.70
75#	11#	0.75
80#	12#	0.80
85#	13#	0.85
90#	14#	0.90
100#	15#	1.00

绣花针的特点：

针眼较缝纫针大百份之二十五。独特的针冠设计，以配合梭床，加强针身部位，加大针沟，令绣花线更顺滑。除铬镀外，亦有镀钛的金针，可以减少磨擦力。

Features of embroidery needle:

Embroidery needle has the needle eye about 25% larger than the sewing needle. Needle cap is uniquely designed to work along with shuttle carrier to strengthen needle body, increase needle groove and make the embroidery thread smoother. In addition to chrome plating, the gold needle is also applied with titanium coating to decrease friction.

皮革：

皮革是非针织或纺织性的布料，刺绣时，是利用针直接将皮革打穿而编织花样，故此，在针、线、朴各方面都有特别的要求。

Leather:

Leather is not the un-knitted or woven cloth. Special needle, thread and interlining is required for leather embroidery since its pattern is completed by directly puncturing leather with needle.

选择针：

针的粗幼，直影响皮革上针孔的大小，一般而言，#75 或＃11 号针最为合适，针咀亦要使用钻石型或三角型。

Selection of needle:

The fineness of needle has direct impact on the size of needle hole on leather. Generally, #75 or #11 is ideal, and the needle mouth should be of diamond type or triangular form.

打版：

针迹不能太密，否则，会在皮革上留下针孔。密度适当的针迹及小针号，可以减少针孔问题。

Pattern-making:

To prevent leaving needle holes on the leather, the needle track should not be too densely distributed. Needle track of proper density and the needle of small size can help reduce needle holes.

底衬：

在进行皮革绣时,纸朴及腊纸都能有效减少磨擦，增加绣花线穿插顺滑程度。

Bottom lining:

Paper lining and wax paper is quite effective in reducing friction and facilitating embroidery thread through needles during leather embroidery.

帆布：

帆布的制成品通常有袋、背囊、旅行夹，因其质地重，框架移动困难，加上磨擦力大，是另一种难控制的布料。

Canvas:

Canvas is commonly used for bags, knapsacks and travelling cases. It is quite difficult to control the canvas due to its heavy texture, difficult-to-move frame and large friction.

选择针：

镀钛针，不但针身加以强化，而且金黄色的表层，亦能有效地防止布料、针及线发生磨擦，减少断线机会。

Selection of needle:

Titanium - coated needle has reinforced needle body and the golden surface to effectively prevent friction among cloth, needle and thread, reducing the probability of thread breakage.

打版：
帆布的布纹粗糙，绣花线很容易陷进坑纹，引致花样的边线部份针迹下沉，如绣小字母，问题就更加严重，所以要尽量加大字型。

Pattern-making:

Due to the coarse grain of canvas, embroidery threads are easily sunk into the pit grain, causing some needle tracks at side boundary sinking, even worse for embroidery of small letters, so the font should be large as much as possible.

底衬：
底衬的作用是支撑帆布，承托花样，建议选用厚纸朴。

Bottom lining:

Bottom lining is used to support canvas and pattern. Thick paper interlining is recommended.

二、电脑绣花机贴布绣技术

II. Computerized embroidery appliqué technique

一般建议

General recommendation

* 打印出你要绣花的线 和布料的换色顺序表。

* 如果你使用有机天然布料，可能会缩水，需在实施你的项目之前，放在热水(不是开水)中洗一下。

* 熨平你要用来做贴布的布料。

* 你必须用优质的带有长的锋利的边的剪刀。

* 关于贴布，要避免使用容易散边的布料。如果你没有选择，应在布边上喷"防散边"胶。

* 如果你要用的布料比较滑，应准备一些双面胶或喷胶。

* Print out the color change sequence list for our embroidery thread and cloth.
*If the shrinkable natural organic cloth is used, it is required to wash in the hot-water (not the boiling water) prior to your operation.
*Iron the cloth to be used as appliqué.
*The shear with long and sharp edge is required,
*Cloth prone to cause raw edge should not be applied as the appliqué. If necessary, sprinkle glues to prevent “raw-edge”.

*Some double faced adhesive tapes or glue should be prepared if the cloth is too smooth.

主要步骤：

Major procedures:

1. 夹入绣布或要刺绣的衣物。
2. 用绣花机和贴布绣花版的第一道线在绣布上绣出轮廓。
3. 将贴布的布料放在夹好的绣布上，将其缝到绣布上，然后用剪刀逐片剪去多余部分。或将好已经切好的片贴入轮廓内。
4. 绣制绣花版的剩下部分。

1. Clamp the embroidery cloth or the cloth to be embroidered.
2. Embroider the outline on the cloth with the first thread by embroidery machine and appliqué embroidery pattern.
3. Put and sew the appliqué cloth on the clamped embroidery cloth, cut out the excess part with shear, or paste the cut appliqué cloth within the outline.
4. Embroider the remaining part of pattern.

详细教程：

Specific procedure:

1. 夹入绣布：

在绣花框中仔细地夹入并固定绣布，确保绣布没有被拉伸、也不起皱。较大的绣花框有时会绷的不是很好。如果你的绣花框有这种趋势，那在你夹入绣布时，在各长边上放入一片厚布片。

2. 用绣花机和贴布绣花版的第一道线 在绣布上绣出轮廓：

将绣花框放入绣花机，并调出贴布绣花版。绣出第一道线(只是第一道线)。用浅色的线 ，以便待会儿不会看出来。这一步是在绣布上做出标记，以帮助你放置贴片。完成的效果应看起来像这样：

1. Clamp embroidery cloth:
Clamp the embroidery cloth carefully in the frame and secure it. Be sure the embroidery cloth is free of any stretching and wrinkle. Larger embroidery frames may be improperly stretched sometime. If so, you have to put a piece of thick cloth on each long edge.
2. Embroider the outline on the cloth with the first line by embroidery machine and appliqué embroidery pattern:
Put the embroidery frame in the embroidery machine, and work out the appliqué embroidery pattern. The embroidered thread (just a line) should be in light color to be

invisible. It is just a mark for you to place the appliqué. After completion, it should look like:

3. 放贴片布于绣布上，缝制后，逐一剪去多余部分，或放入已剪切好的贴片。

3. Put the appliqué on the embroidery cloth. After sewing, gradually cut out the excess part or place the prepared appliqué.

3.1 检查你的线色和贴布顺序表，铺放第一个贴片布在绣布上。我们通常使用胶类物品固定贴片，如双面胶或喷胶来固定。在机器工作时，绝不要用你的手来固定布料 - 这太危险了。喷胶不宜过多，过多会增加断线次数。

3.1 View the thread color and appliqué sequence list and put the first appliqué on the embroidery cloth. Generally, we can secure the appliqué with glues, such as the double faced adhesive tape or adhesive. Do not manually secure the cloth during operation – it's dangerous. The amount of sprayed adhesive should be properly controlled to reduce thread breakage.

3.2 用正确颜色的线 绣制。

需要剪贴片时最好不取出绣花框。如果不行 就从机器中取出绣花框 (不要将绣布取出！)，然后，仔细地，尽量靠近针线边剪去多出的布料，剩下的布料边不要超过 1 mm。

3.2 Embroider with threads with correct color

Do not take out embroidery frame when cutting appliqué. If necessary, take out the frame from machine (but the embroidery cloth), cut out the excess cloth carefully next to the thread edge, with remaining cloth edge not exceeding 1mm.

将绣花绷放回，并重复步骤 3.1 和 3.2，直到所有的贴片都绣到绣布上。记住，一定要按照颜色顺序表。

Put embroidery frame back, and repeat step 3.1 and 3.2 until all appliqué are sewed on the embroidery cloth. Remember following the color sequence list.

4. 按照线色顺序绣制剩下的花型部分。

请注意 - 贴布绣的花版不能变化尺寸。如果你要改变贴布绣的花版尺寸，你最好将其作为普通的绣花版，而不是贴布绣花版，你只要跳过第一道用来定位贴片用的轮廓线即可。

4. Cut out the remaining pattern as per the thread color sequence

Note: size should not be changed for appliqué embroidery pattern. If necessary, you should take it as a normal embroidery pattern but an appliqué pattern and then skip the first step (namely working out the outline for appliqué).